Appendix D

Traffic Impact Analysis

Traffic Impact Study
70–74 Liberty Ship Way Project

Prepared for:

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1 Introduction

1.1 Purpose and Scope of the TIS

The purpose of this Traffic Impact Study (TIS) is to identify traffic impacts associated with the proposed 70–74 Liberty Ship Way Project (proposed project) in the City of Sausalito (City). All facilities analyzed within this study lie within the jurisdiction of the City and therefore the TIS has been prepared per the City of Sausalito's *1995 General Plan Circulation Element*, last updated in 1999, as well as the City of Sausalito's *2020 General Plan Circulation Element*, the final draft which was published in October 2020.

The objectives of this TIS are:

- Document existing traffic conditions, including intersection levels of service in the study area;
- Estimate trip generation, distribution, and assignment characteristics for the proposed project;
- Analyze the traffic impacts that would occur as a result of project traffic under the Existing, Opening Year (Cumulative), and 2040 (Horizon Year) conditions;
- Describe the significance of the potential impacts under the Existing, Opening Year (Cumulative), and 2040 (Horizon Year) Conditions;
- Identify mitigation measures for significantly impacted transportation facilities (if any);
- Describe the adequacy of project access locations and site circulation;
- Address Vehicle-Miles Traveled (VMT) impacts and;
- Describe active transportation and transit facilities in the vicinity of the project site.

The major highways in the project vicinity are U.S. Highway 101 (US-101), also identified as State Route 1 (SR-1), which provides regional connections to Interstate 580 (I-580) to the north, and Interstate 280 (I-280) and Interstate 80 (I-80) to the south. As illustrated in Figure 1, the study area is comprised of the following two intersections within the City of Sausalito:

Intersections

1. Marinship Way – Easterby Street/Bridgeway
2. Spring Street/Bridgeway

Existing Conditions

The TIS includes a description of existing traffic conditions in the site vicinity, including the existing roadway system, existing weekday AM and PM peak hour traffic volumes, and traffic operations. The existing conditions are representative of the year 2020. All traffic volume information is intended to represent pre-Covid-19 conditions.

Existing plus Project

This condition includes analysis of traffic operations under existing conditions with project related traffic added to the AM and PM peak hour traffic volumes. The traffic impacts specific to these conditions are the basis for determining the project-specific impacts, any necessary mitigation measures, and probable conditions of approval.

Opening Year 2023 Baseline (Existing + Ambient Background Growth + Cumulative Projects)

This condition includes a description of traffic conditions and operations within a short-term period where the proposed project is constructed and fully occupied. It is estimated by increasing the existing traffic volumes by an appropriate growth rate that is projected up to the year 2023. This condition also includes traffic generated by other approved and pending projects in the study area. These approved or pending projects are developments in the review process, but not yet fully approved; or, projects that have been approved, but not fully constructed or occupied. The project impacts identified under this scenario are contributions to cumulative impacts, and potential necessary mitigation identified for such impacts can include existing impact fees or other approved funding sources applicable to the project.

Opening Year 2023 plus Project

This condition includes analysis of traffic operations under Opening Year 2023 conditions with project-related traffic added to the study intersections' AM and PM peak hour traffic volumes. The traffic impacts specific to the project under this condition are the basis for determining project's contribution to cumulative impacts and its fair-share responsibility towards proposed mitigation measures.

2040 Baseline

This condition includes a description of traffic conditions and operations within a long-term period where the proposed project is constructed, fully occupied, and the addition of background traffic from the long-term projections in the General Plan. Currently, the 2020 General Plan analyzed the year 2040 as the year for future growth. The project impacts identified under this scenario are contributions to long-term impacts, and potential necessary mitigation identified for such impacts can include existing impact fees or other approved funding sources applicable to the project.

2040 plus Project

This condition includes analysis of traffic operations under 2040 conditions with project-related traffic added to the study intersections' AM and PM peak hour traffic volumes. The traffic impacts specific to the project under this condition are the basis for determining project's contribution to long-term impacts and its fair-share responsibility towards proposed mitigation measures.

1.2 Project Description, Location and Study Area

Figure 1 shows the project's regional location and the study area. Figure 2 illustrates the project's site plan.

The proposed project is located on an approximately 3.9-acre site located on the east side of the City, along the Richardson Bay shore. The proposed project involves the construction of three two-story buildings. The building footprint of Building A is proposed as 9,376 square feet (18,752 gross square feet). Building B is proposed as 9,057 square feet (18,114 gross square feet), and Building C is proposed as 5,963 square feet (11,518 gross square feet) (Figure 4, Overall Site Plan). The potential uses for Building A include dry boat storage, manufacturing, and storage/warehouse; Building B would include manufacturing, repair and maintenance, and medical services; and Building C would include marine industrial, marine commercial space, and restaurant uses.

SOURCE: Google Earth 2019

DUDEK

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FIGURE 1

Regional Location and Study Area

70–74 Liberty Ship Way Project

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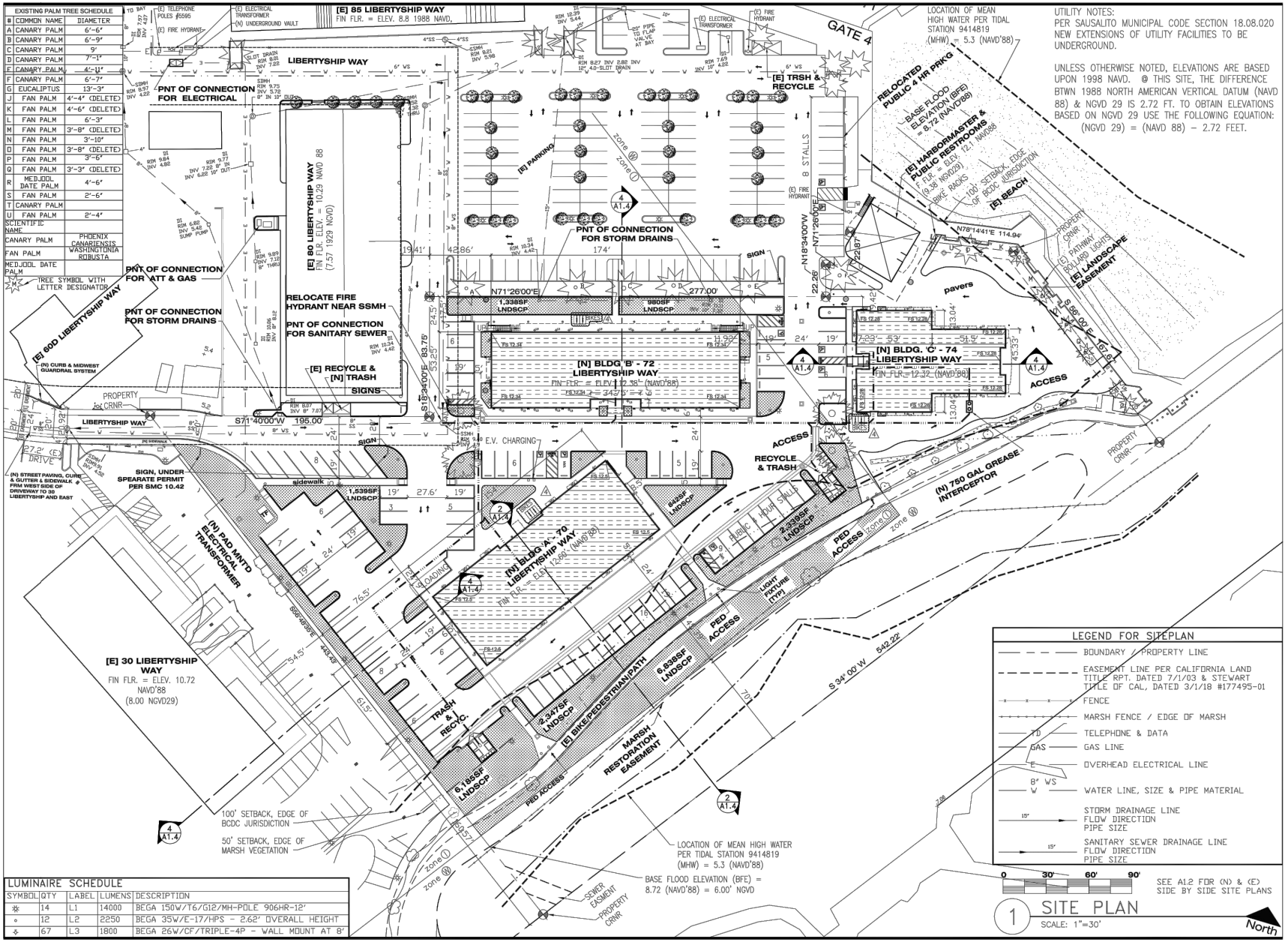

EXISTING PALM TREE SCHEDULE		
#	COMMON NAME	DIAMETER
A	CANARY PALM	6'-6"
B	CANARY PALM	6'-9"
C	CANARY PALM	9'
D	CANARY PALM	7'-1"
E	CANARY PALM	4'-11"
F	CANARY PALM	6'-7"
G	EUCALIPTUS	13'-3"
J	FAN PALM	4'-4" (DELETE)
K	FAN PALM	4'-6" (DELETE)
L	FAN PALM	6'-3"
M	FAN PALM	3'-8" (DELETE)
N	FAN PALM	3'-10"
O	FAN PALM	3'-8" (DELETE)
P	FAN PALM	3'-6"
Q	FAN PALM	3'-3" (DELETE)
R	MEDJOOL DATE PALM	4'-6"
S	FAN PALM	2'-6"
T	CANARY PALM	
U	FAN PALM	2'-4"
SCIENTIFIC NAME		
CANARY PALM		PHOENIX CANARIENSIS
FAN PALM		WASHINGTONIA ROBUSTA
MEDJOOL DATE PALM		

TREE SYMBOL WITH LETTER DESIGNATOR

LUMINAIRE SCHEDULE				
SYMBOL	QTY	LABEL	LUMENS	DESCRIPTION
✳	14	L1	14000	BEGA 150W/T6/G12/MH-POLE 906HR-12'
○	12	L2	2250	BEGA 35W/E-17/HPS - 2.62' OVERALL HEIGHT
⊹	67	L3	1800	BEGA 26W/CF/TRIPLE-4P - WALL MOUNT AT 8'

UTILITY NOTES:
PER SAUSALITO MUNICIPAL CODE SECTION 18.08.020 NEW EXTENSIONS OF UTILITY FACILITIES TO BE UNDERGROUND.

UNLESS OTHERWISE NOTED, ELEVATIONS ARE BASED UPON 1998 NAVD. @ THIS SITE, THE DIFFERENCE BTWN 1988 NORTH AMERICAN VERTICAL DATUM (NAVD 88) & NGVD 29 IS 2.72 FT. TO OBTAIN ELEVATIONS BASED ON NGVD 29 USE THE FOLLOWING EQUATION: (NGVD 29) = (NAVD 88) – 2.72 FEET.

LEGEND FOR SITEPLAN	
	BOUNDARY / PROPERTY LINE
	EASEMENT LINE PER CALIFORNIA LAND TITLE RPT. DATED 7/1/03 & STEWART TITLE OF CAL, DATED 3/1/18 #177495-01
x x x	FENCE
	MARSH FENCE / EDGE OF MARSH
TD	TELEPHONE & DATA
GAS	GAS LINE
E	OVERHEAD ELECTRICAL LINE
8" WS W	WATER LINE, SIZE & PIPE MATERIAL
15"	STORM DRAINAGE LINE FLOW DIRECTION PIPE SIZE
15"	SANITARY SEWER DRAINAGE LINE FLOW DIRECTION PIPE SIZE

ONDA ROSA

Architecture
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Space Planning
Interior Design

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LICENSED ARCHITECT
BRENT J. McDONALD
C – 24017
Dec. 31, 2021
RENEWAL DATE
STATE OF CALIFORNIA

LIBERTYSHIP II PARTNERSHIP

70 - 74
LIBERTYSHIP WAY
SAUSALITO, CA
APN: 063-080-06

	PLN'G/PW RESPONSE	09/20/18
1	PLN'G/PW RESPONSE	11/04/18
2	S.M.F.D.	11/12/18
3	SAUSALITO DPW	1/2/19
	PLN UPDATE	11/15/20
NO	Date	Revision/Issue

Project Number 2015.11
Scale 1" = 30'-0"
Drawn by BJM

ILLUSTRATIVE SITE PLAN

A 1.1

ARCHITECTURE PAGE 2 OF 19

SOURCE: Onda Rosa Architecture 2020

FIGURE 2

Project Site Plan

70–74 Liberty Ship Way Project

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The proposed project would provide an approximately 48,979-square-foot surface parking lot with up to 108 parking spaces, including six handicap spaces; 12 bicycle parking spaces; and five motorcycle spaces. Nine of these spaces would be available for public use on weekdays from 8 a.m. to 5 p.m. in the southwestern portion of the site. An additional eight spaces would be available for public use on weekends and extended evening hours. A truck loading space would be located adjacent to Building A. All pedestrian and accessible path of travel information, as well additional exhibits that detail truck turning radii, and circulation is provided in Appendix C.

Access to the project site would be made available along Liberty Ship Way, which is configured into a loop. Primary ingress would be provided via a converted one-way 20-foot entryway along the southern portion of the Liberty Ship Way loop, while egress will be provided via a two-way internal circulation system that leads to the northern portion of the Liberty Ship Way loop. The proposed project would also enhance access and improve pedestrian and bicycle access for the existing Bay Trail that proceeds along the shoreline of the City. Project construction is expected to occur over approximately 42 months, with construction scheduled to commence in 2021 and be completed in 2023.

1.3 Significance Thresholds

The significance criteria set forth in this analysis pertains to the standards and methodology adopted by the City's Circulation Element for all facilities analyzed. The significance criteria are described below.

1.3.1 City of Sausalito

The City until recently has used the following level of service (LOS) thresholds contained in the City's 1995 Circulation Element.

> *Policy CP-1.2*
>
> *Level of Service Standards. Maintain a letter grade Level of Service of "C" for signalized intersections from the P.M. weekday peak hour except for Johnson, Bay and Princess Streets.*

However, with the recent draft 2020 General Plan Circulation Element, the following LOS threshold is also provided:

> *Policy CP-1.6*
>
> *Level of Service (LOS) Standard. Maintain a letter grade level of service of "D" for signalized intersections during the P.M. weekday peak hour except on Johnson, Bay, and Princess Streets (which are not given an LOS standard).*

For the purposes of this analysis, LOS C is the significance threshold for all intersections analyzed since the draft 2020 General Plan has not yet been adopted. There are no listed criteria for intersections already operating at unacceptable LOS, and therefore for the purposes of this analysis, any intersection that is operating at unacceptable LOS with the addition of project traffic will create a significant impact. If the above thresholds are exceeded a significant impact would occur, and construction of improvements or project modifications to reduce the impact level to insignificance would be required.

The City of Sausalito has not yet adopted significance thresholds for vehicle miles traveled (VMT); therefore, in the interim, the Office of Planning and Research's recommended threshold of 15% below existing per capita

VMT per service population for the region has been used in the General Plan Update for the City, and will be used in this analysis.

1.3.2 Congestion Management Program

The Congestion Management Program (CMP) addresses the problem of increasing congestion on regional highways and principal arterials through a coordinated approach involving the State, County, Cities, and transit providers. The Transportation Authority of Marin (TAM) has been designated as the Congestion Management Agency (CMA) for the County of Marin, which also encapsulates the City of Sausalito.

The CMP identifies arterial roadways and freeway segments within the study area that may require specialized analysis according to the procedures outlined in TAM's *Final Report 2015 CMP Update* (2015). The nearest CMP facilities identified within the City of Sausalito and nearest to the project study area, include, US-10 between Spencer Avenue and the Golden Gate Bridge, and the arterial roadway segment of Bridgeway between Gate 5 Road and Gate 6 Road. Additionally, if a major development results in a net increase of 100 or more PM peak hour vehicle trips, then the TAM county traffic model requires t the project be analyzed and amended if necessary. As will be discussed in Chapter 3, the proposed project will generate fewer than 100 PM peak hour vehicle trips, and will not generate substantial traffic along CMP facilities, and is therefore exempt from any further CMP analysis.

1.4 Analysis Methodology

1.4.1 Levels of Service

Level of service (LOS) is commonly used as a qualitative description of roadway segments and intersection operations and is based on the design capacity of the roadway segment or intersection configuration, compared to the volume of traffic using the roadway segment or intersection.

Intersections

For the study area unsignalized intersections, the *Highway Capacity Manual* (HCM) methodology (Transportation Research Board 2017) was used. LOS software, and unsignalized intersections were analyzed per HCM 6th Edition methodology using Synchro LOS software (version 10).

Table 1 shows the LOS values by delay ranges for unsignalized intersections under the HCM methodology.

Table 1. Levels of Service for Intersections using HCM Methodology

Level of Service	Signalized Intersections Control Delay (in seconds)
A	< 10.0
B	> 10.0 to < 20.0
C	> 20.0 to < 35.0
D	> 35.0 to < 55.0
E	> 55.0 to < 80.0
F	> 80.0

Source: HCM 2017.

1.4.2 Vehicle Miles Traveled

A change to transportation analysis in CEQA environmental review occurred when Governor Jerry Brown signed Senate Bill (SB) 743 into a law that required an update in the metric of transportation impact from Level of Service (LOS) and automobile delay to one that promotes the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses for transit priority areas. SB 743 required the Governor's Office of Planning and Research to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Under the new transportation guidelines, LOS, or vehicle delay, will no longer be considered an environmental impact under CEQA.

The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018. Under the new guidelines, VMT has been adopted as the most appropriate measure of transportation impacts under CEQA. The OPR's regulatory text indicates that a public agency may immediately commence implementation of the new transportation impact guidelines, and that the guidelines must be implemented statewide by July 1, 2020. The City of Sausalito has not yet adopted VMT specific guidelines however, the General Plan Update EIR provides the City's approach for VMT analysis for projects. Therefore, the guidance from the OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018 and the General Plan Update *EIR Appendix F Transportation Supporting Information* has been used for the proposed project's VMT analysis to determine its CEQA specific transportation impact. The details of applicable screening and VMT analysis methodology has been provided in Chapter 10 of the TIA.

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2 Existing Conditions

This section describes existing conditions within the study area. Characteristics are provided for the existing roadway system, peak hour traffic volumes, and traffic operations.

2.1 Roadway System

The existing traffic controls and geometrics at the study area intersections are shown in Figure 3. Characteristics of the existing street system in the study area are described below. All characteristics are intended to represent pre-Covid-19 conditions.

U.S. Highway 101 (US-101) extends along the Pacific Coast of California. Within Marin County and the City of Sausalito, US-101 co-identified as State Route 1 (SR-1), and is an eight lane highway that serves as the principal route between Sausalito, and the City of San Francisco to the south; and, Marin, San Rafael, and Santa Rosa to the north. Access between U.S. Highway 101 and the proposed project site is provided via an interchange with Rodeo Avenue (restricted to the northbound direction only) and with the Bridge Boulevard/Donahue Street interchange.

Bridgeway is generally a four-lane primary arterial roadway and intersects with two of the study area intersections analyzed in this study (Spring Street and Easterby Street – Marinship Way). Bridgeway serves as the primary connection point to the Marinship area, including a majority of the marine related activities within the City. In the project area, Bridgeway is a four-lane divided roadway, however, it is reduced to two-lanes without a median south of Napa Street. There is a Class II bicycle lane on both sides of the road, however east of Easterby Street – Marinship Way the bicycle lane is reduced to a class III bicycle route on the southern portion as the roadway narrows from two lanes to one. Bridgeway is classified as a primary arterial within the City's circulation element and the posted speed limit is 30 miles per hour (MPH). Parking is generally provided on both sides of the roadway.

Spring Street is a two-lane undivided roadway and intersects Bridgeway. Spring Street connects Bridgeway to Woodward Avenue which can be utilized to reach US-101. Spring Street is classified as a local street within the City's circulation element and the posted speed limit is 25 MPH. Parking is generally provided on both sides of the roadway.

Easterby Street is a two-lane undivided roadway and intersects Bridgeway and turns into Marinship Way north of Bridgeway. Easterby Street also turns into Woodward Avenue and its southern terminus, which can be utilized to reach US-101. Easterby Street is classified as a local street within the City's circulation element and the posted speed limit is 25 MPH. Parking is generally provided on both sides of the roadway.

Marinship Way is generally a two-lane undivided roadway and intersects Bridgeway and Liberty Ship Way. Marinship Way is partially a public roadway, however transitions into a private roadway west of Liberty Ship Way. Marinship Way is classified as a local street within the City's circulation element and the posted speed limit is 25 MPH. Parking is generally not provided on either side of the roadway.

Liberty Ship Way is generally a two-lane undivided roadway and intersects Bridgeway and Marinship Way. Liberty Ship Way is the main access roadway to the project site and serves many of the waterfront and marine uses in the Marinship area of the City. Liberty Ship Way is unlisted within the City's circulation element and the posted speed limit is 25 MPH. Parking is generally not provided on either side of the roadway.

2.2 Traffic Volumes

A prior traffic and parking analysis conducted by Robert L. Harrison Transportation Planning (2018) was utilized to derive the existing weekday peak hour turning movement counts at the study intersections. Counts were collected on April 18, 2018 during a typical non-holiday week. For purposes of this study and analysis, the traffic counts were developed with a conservative growth rate of 2% per year to create conditions representative of the year 2020. All traffic volume information is intended to represent pre-Covid-19 conditions. The original traffic counts are provided in Appendix A. For the purposes of consistency, the year 2020 counts were compared to those utilized within the 2020 General Plan Circulation Element and were deemed to be adequately consistent for both intersections.

Existing weekday segment PM peak hour directional volume and intersection AM and PM peak hour volumes are summarized on Figure 4. This analysis focuses on the weekday segment PM peak hour directional flow of traffic (4:00 to 6:00 p.m.), as well as intersection AM (7:00 to 9:00 a.m.) and the PM (4:00 to 6:00 p.m.) peak periods. The peak periods represent the highest volume of traffic for the adjacent street system.

2.3 Intersection Operations

An intersection LOS analysis was prepared using the HCM 6th Edition methodology for signalized intersections. As described in Chapter 1, Synchro (version 10) was utilized to calculate delay for signalized intersections. Signal timing for both intersections was obtained from the City. Table 2 shows the results of the existing conditions LOS analysis, detailed LOS worksheets are included in Appendix B.

Table 2. Existing Weekday Peak Hour Intersection LOS

No.	Intersection	Traffic Control	LOS Method	AM Peak Hour		PM Peak Hour	
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]
1	Marinship Way-Easterby Street/Bridgeway	Signalized	HCM	14.7	B	13.4	B
2	Spring Street/Bridgeway	Signalized	HCM	4.6	A	3.4	A

Source: Dudek 2020
Note: HCM = Highway Capacity Manual
1 Delay in seconds per vehicle
2 Level of Service (LOS)
BOLD – Intersection is operating with unsatisfactory LOS

As shown in Table 2, all of the study area intersections are currently operating with satisfactory LOS (LOS C/D[1] or better) under existing conditions during both peak hours.

2.4 Transit System

Both Marin Transit and Golden Gate Transit provide service to the Marinship Way-Easterby Street/Bridgeway intersection as well as the Napa Street/Bridgeway intersection. Both bus stop locations are approximately a quarter mile distance from the project site. All transit information is based on pre-Covid-19 conditions.

[1] For purposes of this analysis, LOS C is the minimum satisfactory LOS based on the current General Plan. Upon adoption of the 2020 General Plan, LOS D will become the minimum satisfactory LOS.

Marin Transit Routes 17 and 61 provide daily service, while Routes 71X and 115 provide weekday service only. Route 17 provides frequent service to the City of San Rafael every 15-30 minutes during peak hours and every hour on weekends. Route 61 provides service to Bolinas on an hourly basis on weekdays, and every 2 hours generally on weekends (weekend service limited to the months of March and October only). Route 71X provides weekday only service to the City of Novato every 30 minutes during peak hours and hourly thereafter. Route 115 provides limited weekday service to the communities of Mill Valley and Strawberry with one coach in service during both the AM and PM peak periods.

Golden Gate Transit Routes 2, 4, and 92 provide only weekday service, while Route 30 provides weekday and weekend service as well. Route 2 is generally a commuter route that provides service between Marin City and the City of San Francisco only during the AM and PM peak periods with a headway of 20 minutes. Route 4 is a commuter route that provides service between Strawberry Village and the City of San Francisco with 15-20-minute headways during the AM and PM peak period, and hourly service thereafter. Route 92 is a commuter route that provides service between the Manzanita Park & Ride and the City of San Francisco with hourly service throughout the day, ending during the PM peak period commute. Route 30 provides service between the San Rafael Transit Center and the Salesforce Transit Center within the City of San Francisco with service generally provided on an hourly basis on both weekdays and weekends.

Golden Gate Transit also manages the Sausalito Ferry, which is approximately 1-mile south of the project site and provides service to the City of San Francisco Ferry Building. Service is provided every weekday on an hourly basis during the AM and PM peak period and thereafter every two to three hours. Weekend service is limited generally to afternoon arrivals and departures.

2.5 Pedestrian and Bicycle Facilities

An existing Class II bicycle lane is provided along both side of Bridgeway, however the southern portion of the roadway narrows south of Marinship Way and is therefore reduced to a Class III bicycle route, the northern portion of which remains a Class II bicycle lane.

Additionally, the Bay Trail along the boundary of the project site provides a separate Class I bicycle path as well as separate pedestrian facilities. The proposed project will improve the section of the Bay Trail along its frontage with improved lighting and safety elements. All pedestrian and accessible path of travel information is provided in Appendix C. Due to the industrial history of the Marinship area, Liberty Ship Way generally lacks sidewalks and adequate pedestrian amenities.

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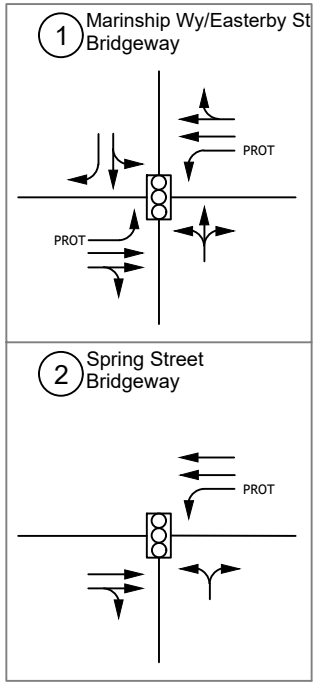

Legend

- Project
- X — Study Intersection
- Lane Geometrics
- PROT — Protected Left Turn Phasing
- XD — Number of lanes (divided roadway)
- XU — Number of lanes (undivided roadway)

SOURCE: Google Earth 2019

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Not to Scale

FIGURE 3

Existing Traffic Controls and Geometrics

70–74 Liberty Ship Way Project

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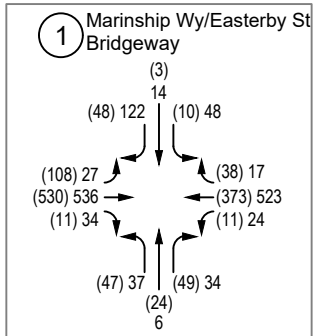

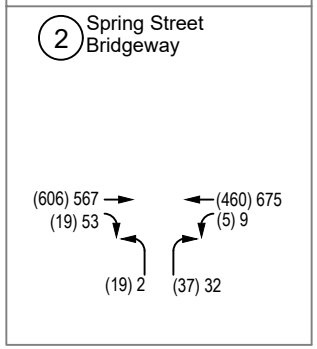

Legend

- Project
- (X) Study Intersection
- (X) Weekday AM Peak Hour Traffic Volumes
- X Weekday PM Peak Hour Traffic Volumes

SOURCE: Google Earth 2019

DUDEK

Not to Scale

FIGURE 4

Existing Traffic Volumes

70–74 Liberty Ship Way Project

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3 Trip Generation

This section documents the trip generation, distribution, and assignment of project traffic.

3.1 Trip Generation

Trip generation estimates were based on the project description and characteristics, and the expected land uses associated within each of the three buildings proposed as part of the project. The square footage for each building was calculated utilizing the full building square footage. Trip generation was estimated by using trip rates from the Institute of Transportation Engineers 10th Edition *Trip Generation* book (2017). Accordingly, AM and PM peak hour trip generation volumes were computed. Table 3 presents the trip generation estimates for the proposed project.

Table 3. Project Trip Generation

Land Use[1]	Quantity	Daily	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Building A - Manufacturing	3.176 TSF	12	2	0	2	1	1	2
Building A - Warehousing	15.576 TSF	27	2	1	3	1	2	3
Building A - Total		*39*	*4*	*1*	*5*	*2*	*3*	*5*
Building B - Manufacturing	13.561 TSF	53	6	2	8	3	6	9
Building B - Medical Clinic	4.553 TSF	174	13	4	17	4	11	15
Building B - Total		*227*	*19*	*6*	*25*	*7*	*17*	*24*
Building C - Marine Industrial	4.767 TSF	24	3	0	3	0	3	3
Building C - Marine Commercial	4.585 TSF	173	3	1	4	9	9	18
Building C - Restaurant	2.166 TSF	243	12	10	22	13	8	21
Building C - Total		440	18	11	29	22	20	42
Project Total		**706**	**41**	**18**	**59**	**31**	**40**	**71**

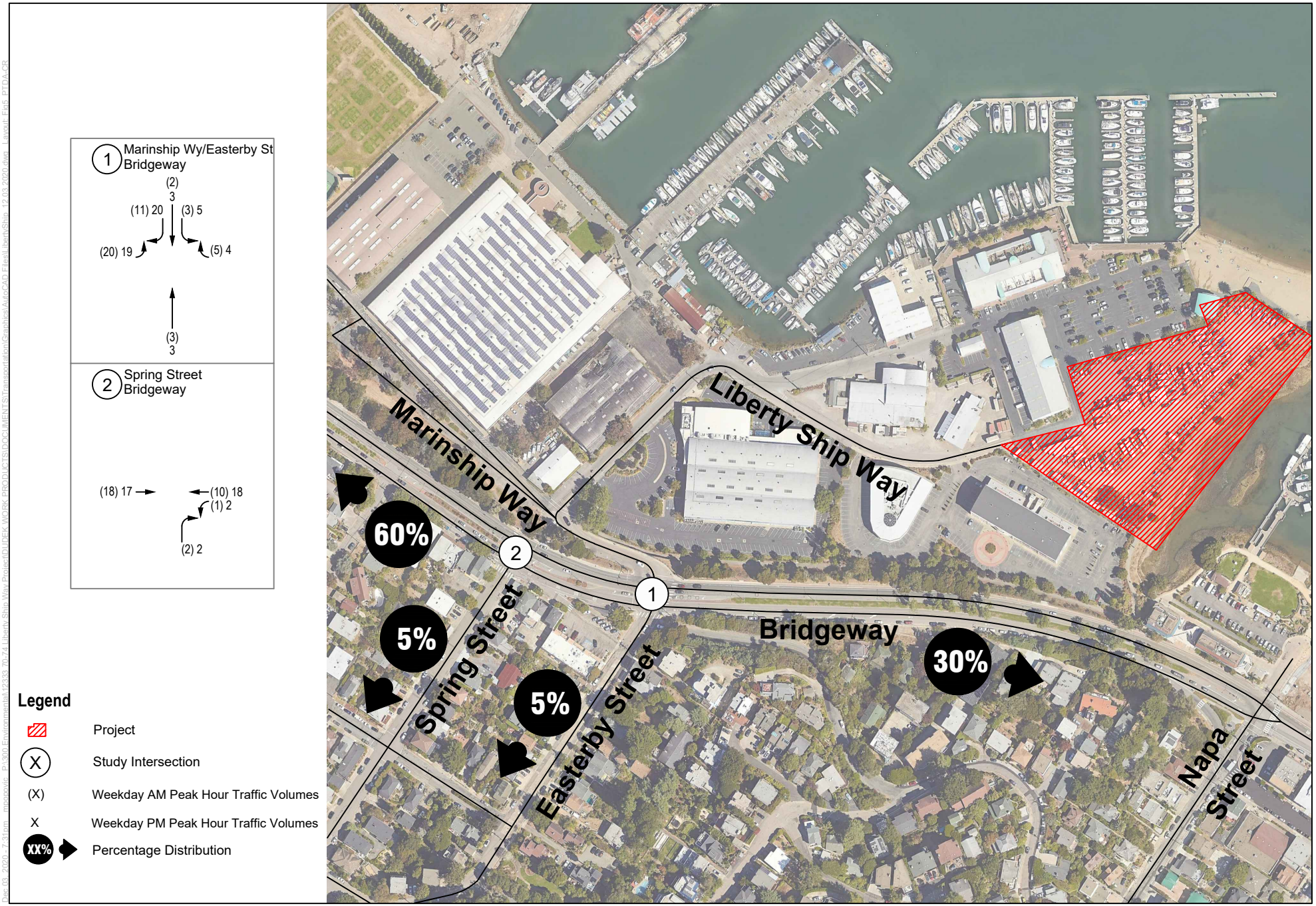
Notes:
[1] Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.

As shown in Table 3, Building A may contain land uses such as Manufacturing and Warehousing, and would generate approximately 39 daily trips, 5 AM peak hour trips (4 inbound and 1 outbound), and 5 PM peak hour trips (2 inbound and 3 outbound). Building B may contain land uses such as Manufacturing and Medical Clinics, and would generate approximately 227 daily trips, 25 AM peak hour trips (19 inbound and 6 outbound), and 24 PM peak hour trips (7 inbound and 17 outbound). Building C may contain land uses such as Industrial, Commercial, and Restaurant and would generate approximately 440 daily trips, 29 AM peak hour trips (18 inbound and 11 outbound), and 42 PM peak hour trips (22 inbound and 20 outbound). In total the proposed project consisting of all three buildings would generate 706 daily trips, 59 AM peak hour trips (41 inbound and 18 outbound), and 71 PM peak hour trips (31 inbound and 40 outbound).

3.2 Trip Distribution and Assignment

Project trips were distributed to the study area intersections using the regional location of the project and logical commute routes. Project traffic distribution and assignment was divided according to the expected commute patterns for each of the project's land uses. Commercial, Restaurant, and Medical Uses are expected to generate slightly more localized traffic from within the City, while the remaining uses (Industrial, Manufacturing, and Warehousing) are expected to draw a greater degree of regional traffic.

All project traffic is expected to utilize Liberty Ship Way and Marinship Way, to access Bridgeway, the only roadway that allows access to the Marinship area. Project traffic assigned towards US-101 is expected to utilize Bridgeway and the interchanges of US-101 at Bridge Boulevard or at Rodeo Avenue. The project trip distribution and assignment for Commercial, Restaurant, and Medical Uses is shown in Figure 5, while the project trip distribution and assignment and for Industrial, Manufacturing, and Warehousing uses is shown in Figure 6. The project trip assignment for the entire project is shown in Figure 7.



SOURCE: Google Earth 2019

FIGURE 5

Project Trip Distribution & Assignment - Commercial/Restaurant/Medical Uses

70–74 Liberty Ship Way Project

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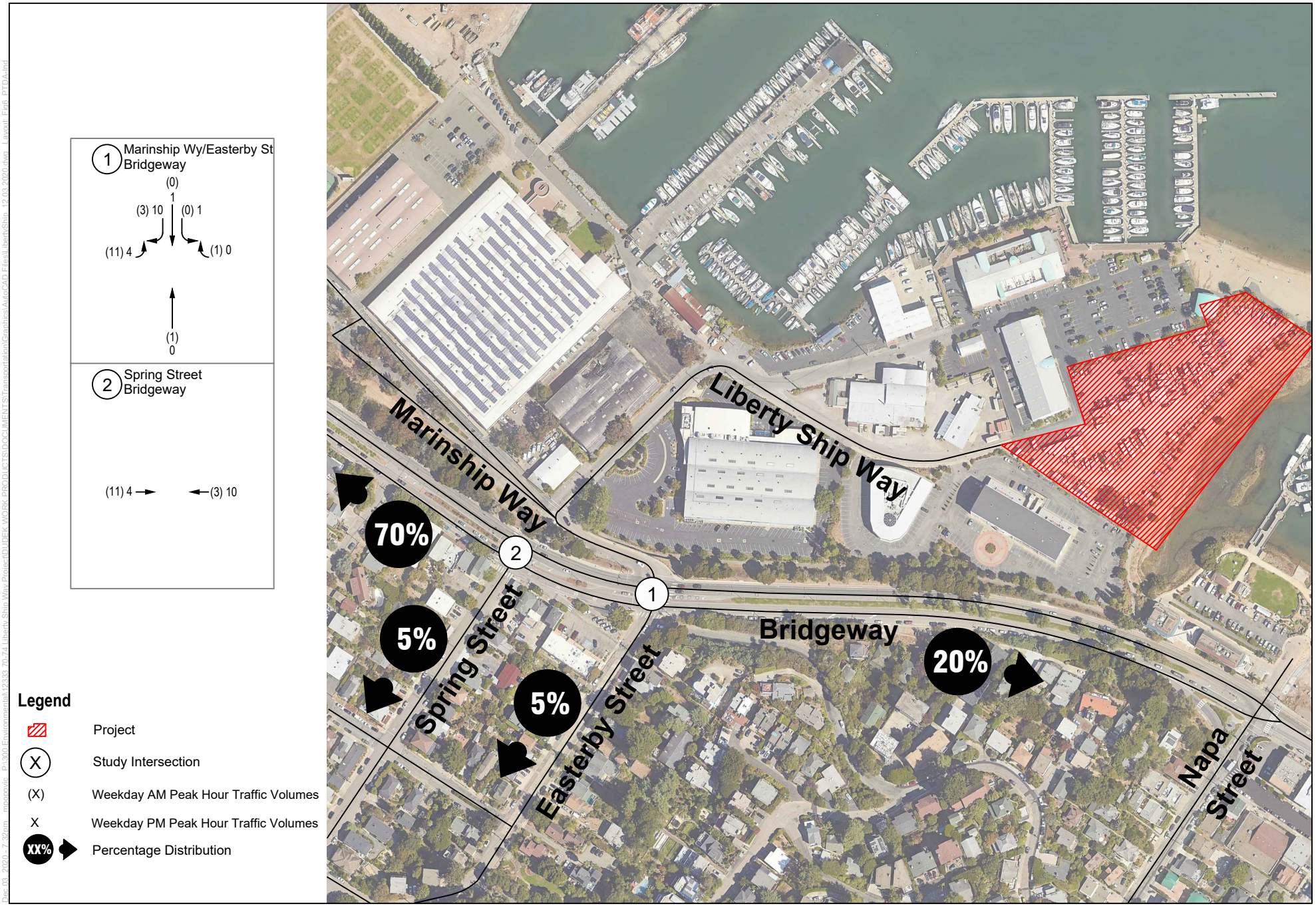

SOURCE: Google Earth 2019

FIGURE 6

Project Trip Distribution & Assignment - Industrial/Manufacturing/Warehousing Uses

70–74 Liberty Ship Way Project

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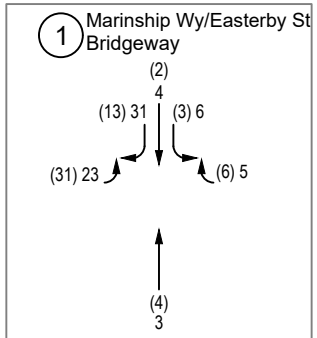

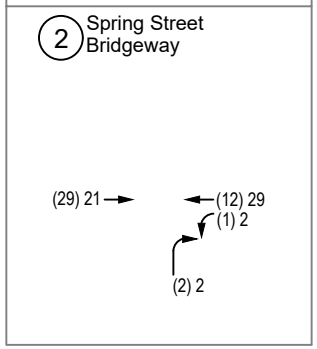

Legend

- Project
- (X) Study Intersection
- (X) Weekday AM Peak Hour Traffic Volumes
- X Weekday PM Peak Hour Traffic Volumes

SOURCE: Google Earth 2019

DUDEK

Not to Scale

FIGURE 7

Project Trip Assignment - Total

70–74 Liberty Ship Way Project

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4 Existing Plus Project

This section describes project-specific impacts under Existing plus Project conditions within the study area for intersection operations. For any significant project impacts identified by the analysis, mitigation measures will be provided to offset impacts to less than significant levels.

4.1 Traffic Volumes

As stated previously, all traffic volume information is intended to represent pre-Covid-19 conditions. The existing intersection configurations (shown in Figure 3) have been assumed to be preserved under the Existing plus Project conditions. Project traffic volumes shown in Figure 7 were added to the Existing traffic volumes shown in Figure 4. Figure 8 shows the Existing plus Project traffic volumes.

4.2 Intersection Operations

An intersection LOS analysis was prepared using the HCM 6th Edition methodology for signalized intersections. As described in Chapter 1, Synchro (version 10) was utilized to calculate delay for signalized intersections. Table 4 shows the results of the Existing plus Project conditions LOS analysis, detailed LOS worksheets are included in Appendix B.

As shown in Table 4, all of the study area intersections will continue to operate with satisfactory LOS (LOS C/D or better) under Existing plus Project conditions during both peak hours.

Table 4. Existing plus Project Intersection Level of Service

No.	Intersection	Control	LOS Method	Existing Conditions				Existing plus Project				Change in Delay		Significant Impact	
				AM Peak		*PM Peak*		*AM Peak*		*PM Peak*					
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*AM*	*PM*	*AM*	*PM*
1	Marinship Way-Easterby Street/ Bridgeway	Signalized	HCM	14.7	B	13.4	B	16.7	B	15.3	B	2.0	1.9	No	No
2	Spring Street/ Bridgeway	Signalized	HCM	4.6	A	3.4	A	4.6	A	3.5	A	0.0	0.1	No	No

Source: Dudek 2020
Note: HCM = Highway Capacity Manual
1 Delay in seconds per vehicle
2 Level of Service (LOS)

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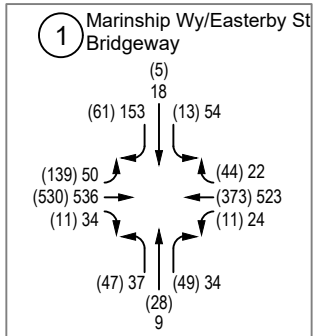

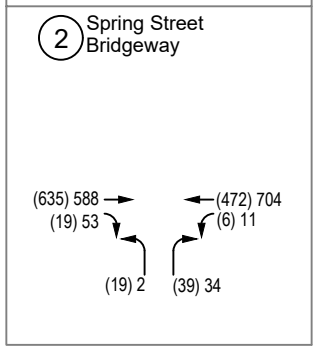

Legend

- Project
- (X) Study Intersection
- (X) Weekday AM Peak Hour Traffic Volumes
- X Weekday PM Peak Hour Traffic Volumes

SOURCE: Google Earth 2019

DUDEK

Not to Scale

FIGURE 8

Existing plus Project Traffic Volumes

70–74 Liberty Ship Way Project

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5 Opening Year Conditions

This section presents the results of the Opening Year condition analysis that was conducted for a short-term horizon year (2023) where the proposed project would be fully constructed and occupied. The cumulative conditions are based on the addition of traffic from approved and pending projects in the study area, along with the application of an annual growth rate, to the existing 2020 traffic volumes.

5.1 Cumulative Projects

A list of cumulative projects was obtained from the City of Sausalito Community Development Department. The cumulative projects are projects that are proposed and in the review process, but not yet fully approved; or, projects that have been approved, but not fully constructed or occupied. Based on review of the data and discussions with City staff, three cumulative projects were identified that would potentially add traffic to the roadways and intersections within the study area by year 2023. Figure 9 shows the locations of these cumulative projects.

5.1.1 Trip Generation

Project trip generation estimates for the cumulative projects were prepared using trip rates from the *Institute of Transportation Engineers, Trip Generation* (2017) and from information obtained from City staff. Table 5 provides the summary of trip generation estimates for the cumulative projects. As shown in Table 5, the cumulative projects are forecast to generate approximately 588 daily trips, 52 AM peak hour trips, and 75 PM peak hour trips.

Table 5. Cumulative Projects Trip Generation Summary

No.	Land Use	Quantity	Units	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	*Out*	*Total*	*In*	*Out*	*Total*
1	Bridgeway Commons (Multi-Family)[1]	16	DU	131	2	10	12	9	4	13
2	Marin Theater Remodel and Conversion[2]	–	–	–	–	–	–	–	–	–
	Theater	1	Screen	220	6	8	14	20	18	38
	Restaurant	1.196	TSF	134	7	5	12	7	4	11
	Office	6.749	TSF	66	7	1	8	1	7	8
3	265 Gate 5 Road – Artist Commercial/Industrial Space[3]	7.400	TSF	37	5	1	6	1	4	5
Total Trip Generation				**588**	**27**	**25**	**52**	**38**	**37**	**75**

Notes:
DU – Dwelling Unit; TSF – 1,000 square feet.
Cumulative projects information obtained from the City of Sausalito Community Development Department.
1 Trip generation data derived from Bridgeway Commons Circulation Study, Parisi Transportation Consulting, 2016.
2 Trip generation data derived from City of Sausalito Planning Division Project Plans for Marin Theater - 1010 Caledonia Street (DR-CUP-SP EA 16-214), 2016.
3 Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017

5.1.2 Trip Distribution and Assignment

Trip distributions and assignments for the cumulative projects were analyzed assuming logical commute corridors. The trips generated by the cumulative projects were distributed through the study area network, and then added to the existing traffic volumes.

5.2 Traffic Volumes

Opening Year 2023 traffic volumes were estimated by applying an annual ambient growth rate to the existing (2020) traffic volumes, plus, the addition of traffic from cumulative projects (discussed above).

The ambient growth rate represents traffic expected in the short term and is a conservative reflection of traffic increases in the region. An annual growth rate of 2% per year for a period of three years (2020 – 2023), plus the addition of traffic from cumulative projects, was added to the existing traffic volumes. Figure 10 illustrates the Opening Year 2023 baseline (no project) traffic volumes for the intersection peak hour conditions.

5.3 Intersection Operations

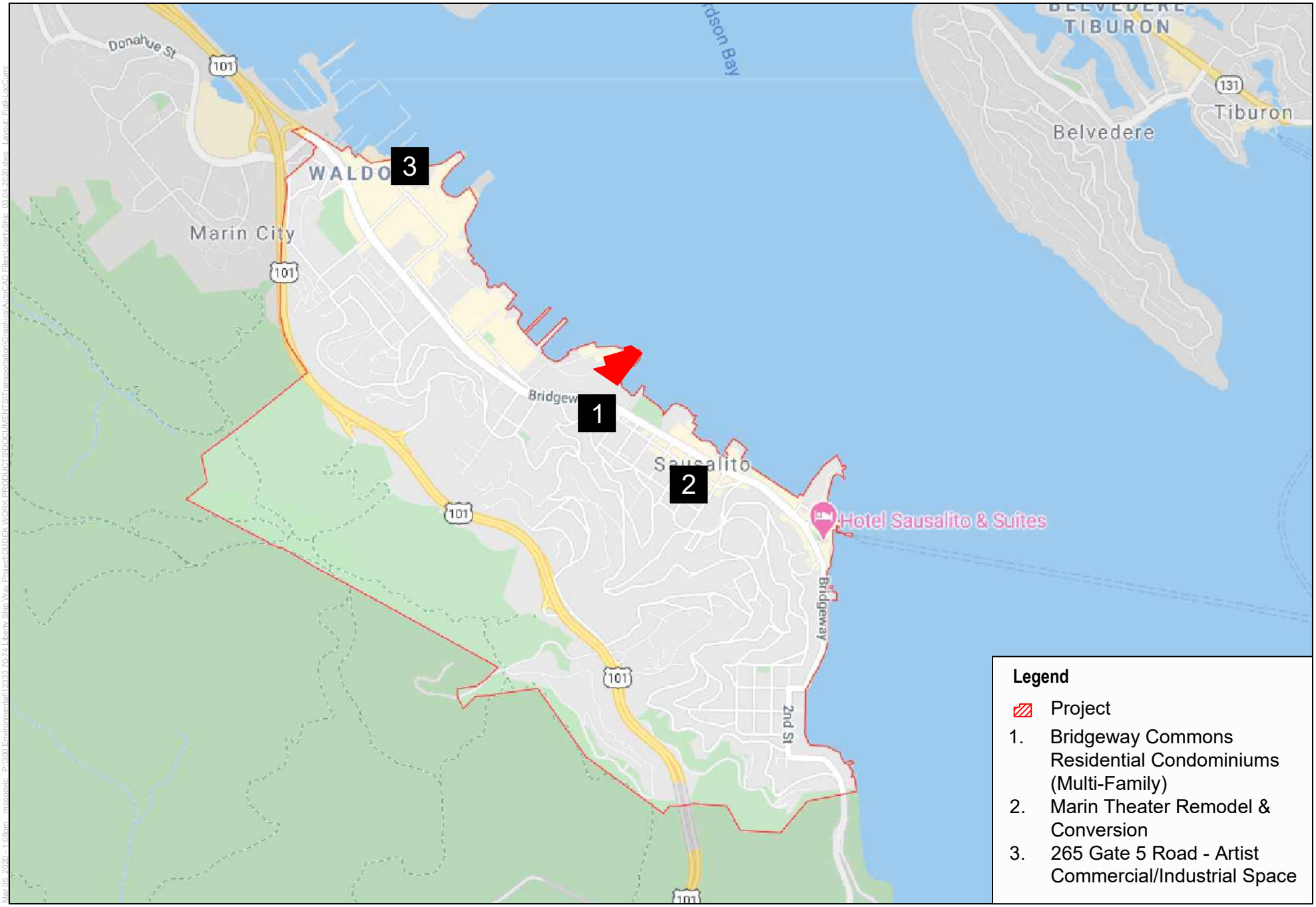
An intersection LOS analysis was prepared using the HCM 6th Edition methodology for signalized intersections. As described in Chapter 1, Synchro (version 10) was utilized to calculate delay for signalized intersections. Table 6 shows the results of the existing conditions LOS analysis, detailed LOS worksheets are included in Appendix B.

Table 6. Opening Year 2023 Peak Hour Intersection LOS

No.	Intersection	Traffic Control	LOS Method	AM Peak Hour		PM Peak Hour	
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]
1	Marinship Way-Easterby Street/Bridgeway	Signalized	HCM	14.7	B	13.6	B
2	Spring Street/Bridgeway	Signalized	HCM	4.6	A	3.5	A

Source: Dudek 2020
Note: HCM = Highway Capacity Manual
1 Delay in seconds per vehicle
2 Level of Service (LOS)
BOLD – Intersection is operating with unsatisfactory LOS

As shown in Table 6, all of the study area intersections are forecast to continue operating with satisfactory LOS (LOS C/D or better) under Opening Year 2023 conditions during both peak hours.



SOURCE: Google Maps 2020

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FIGURE 9

Locations of Cumulative Projects

70–74 Liberty Ship Way Project

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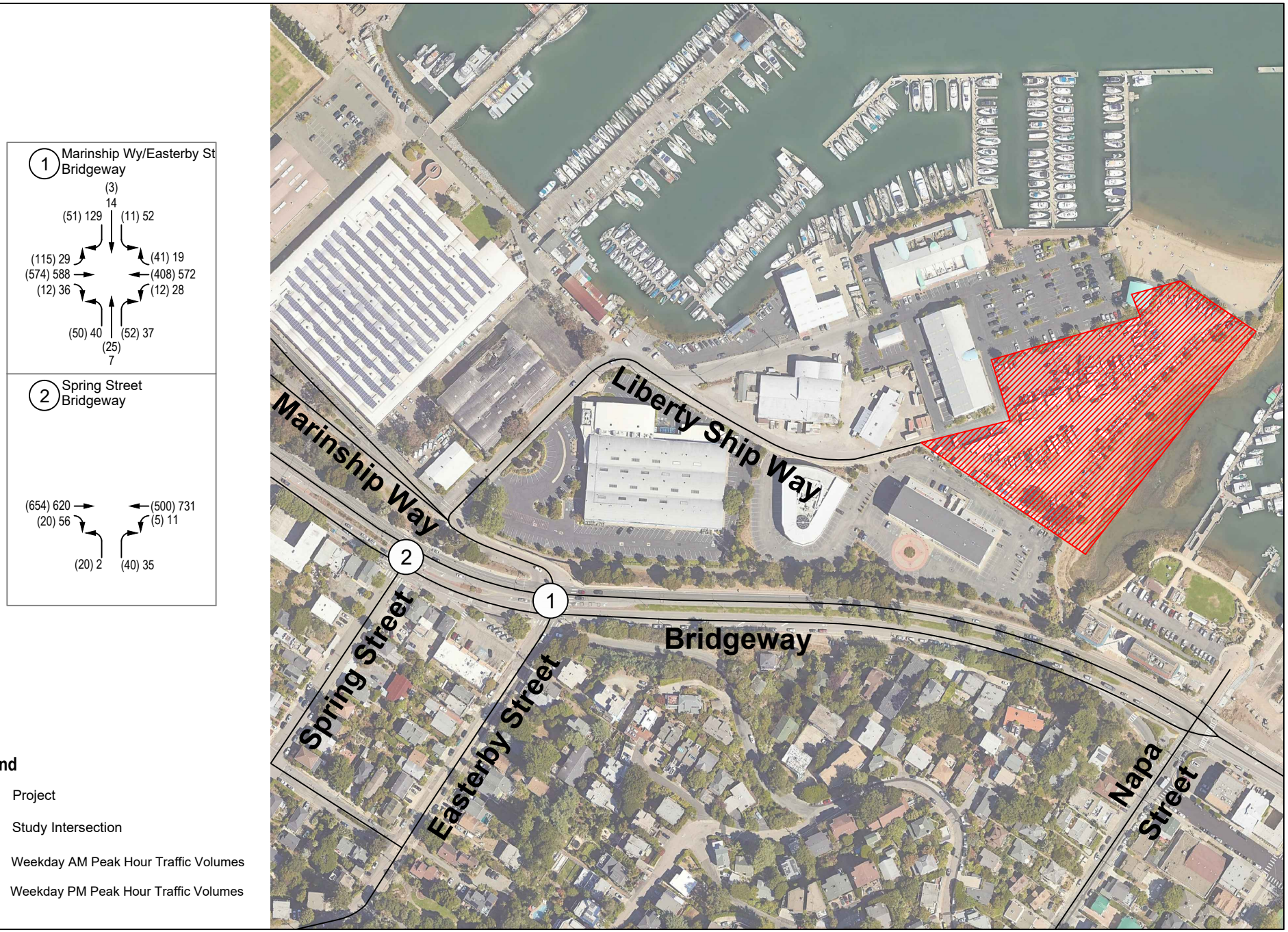

SOURCE: Google Earth 2019

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FIGURE 10

Opening Year 2023 Traffic Volumes

70–74 Liberty Ship Way Project

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6 Opening Year Plus Project

This section describes impacts under Opening Year 2023 plus Project conditions within the study area for intersection operations. For any significant project impacts identified in the analysis, mitigation measures will be provided to offset impacts to less than significant levels.

6.1 Traffic Volumes

The project trip assignment, as shown in Figure 7, was added to the Opening Year 2023 baseline traffic volumes, as shown in Figure 10, to derive the Opening Year 2023 plus Project traffic volumes. Figure 11 shows the Opening Year 2023 plus Project traffic volumes.

6.2 Intersection Operations

An intersection LOS analysis was prepared using the HCM 6th Edition methodology for signalized intersections. As described in Chapter 1, Synchro (version 10) was utilized to calculate delay for signalized intersections. Table 7 shows the results of the Opening Year 2023 plus Project conditions LOS analysis, detailed LOS worksheets are included in Appendix B.

As shown in Table 7, all of the study area intersections will continue to operate with satisfactory LOS (LOS C/D or better) under Opening Year 2023 plus Project conditions during both peak hours.

Table 7. Opening Year 2023 plus Project Intersection Level of Service

No.	Intersection	Control	LOS Method	Opening Year 2023				Opening Year 2023 plus Project				Change in Delay		Significant Impact	
				AM Peak		*PM Peak*		*AM Peak*		*PM Peak*					
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*AM*	*PM*	*AM*	*PM*
1	Marinship Way-Easterby Street/ Bridgeway	Signalized	HCM	14.7	B	13.6	B	16.9	B	15.4	B	2.2	1.8	No	No
2	Spring Street/ Bridgeway	Signalized	HCM	4.6	A	3.5	A	4.7	A	3.7	A	0.1	0.2	No	No

Source: Dudek 2020
Note: HCM = Highway Capacity Manual
1 Delay in seconds per vehicle
2 Level of Service (LOS)

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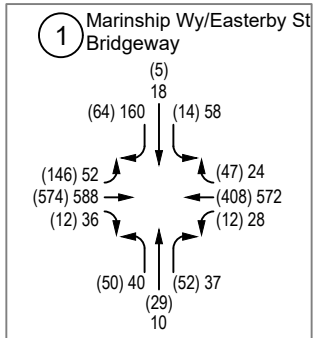

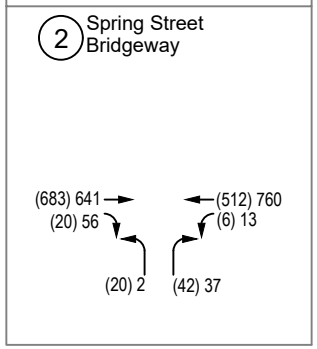

Legend

- Project
- (X) Study Intersection
- (X) Weekday AM Peak Hour Traffic Volumes
- X Weekday PM Peak Hour Traffic Volumes

SOURCE: Google Earth 2019

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FIGURE 11

Opening Year 2023 plus Project Traffic Volumes

70–74 Liberty Ship Way Project

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7 2040 Conditions

This section presents the results of the 2040 baseline condition analysis that was conducted for a long-term horizon year (2040) where the proposed project would be fully constructed and occupied, and background growth as depicted in the 2020 General Plan would be produced.

7.1 Traffic Volumes

The 2040 baseline traffic volumes were obtained directly from the 2020 General Plan Circulation Element and from the General Plan's Appendix F Transportation Supporting Information document.

Figure 12 illustrates the 2040 baseline (no project) traffic volumes for the intersection peak hour conditions.

7.2 Intersection Operations

An intersection LOS analysis was prepared using the HCM 6th Edition methodology for signalized intersections. As described in Chapter 1, Synchro (version 10) was utilized to calculate delay for signalized intersections. Table 6 shows the results of the existing conditions LOS analysis, detailed LOS worksheets are included in Appendix B.

Table 8. 2040 Peak Hour Intersection LOS

No.	Intersection	Traffic Control	LOS Method	AM Peak Hour		PM Peak Hour	
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]
1	Marinship Way-Easterby Street/Bridgeway	Signalized	HCM	12.7	B	12.8	B
2	Spring Street/Bridgeway	Signalized	HCM	4.6	A	4.4	A

Source: Dudek 2020
Note: HCM = Highway Capacity Manual
1 Delay in seconds per vehicle
2 Level of Service (LOS)
BOLD – Intersection is operating with unsatisfactory LOS

As shown in Table 8, all of the study area intersections are forecast to continue operating with satisfactory LOS (LOS C/D or better) under 2040 baseline conditions during both peak hours.

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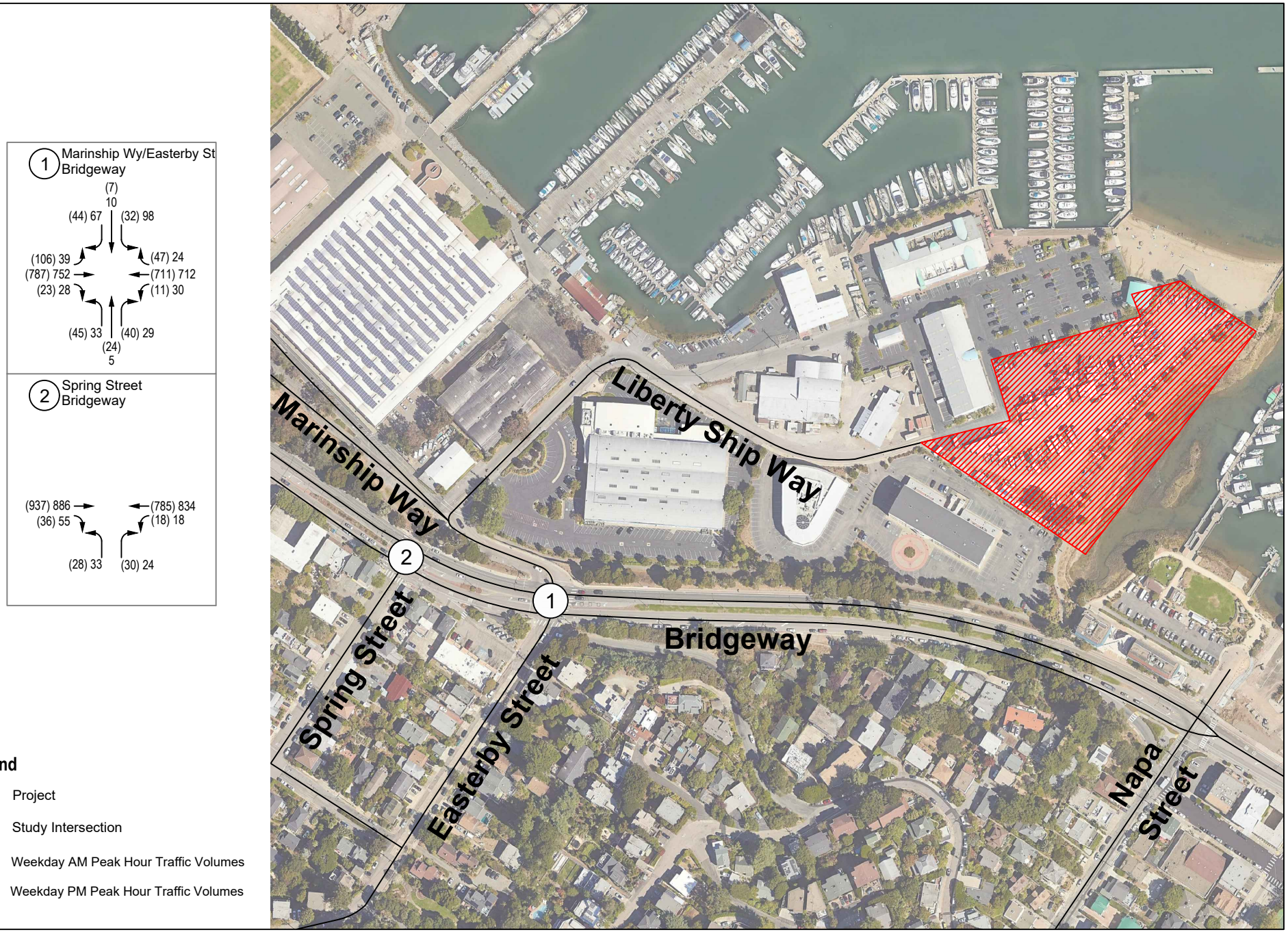

SOURCE: Google Earth 2019

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FIGURE 12

2040 Traffic Volumes

70–74 Liberty Ship Way Project

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8 2040 Plus Project

This section describes impacts under 2040 plus Project conditions within the study area for intersection operations. For any significant project impacts identified in the analysis, mitigation measures will be provided to offset impacts to less than significant levels.

8.1 Traffic Volumes

The project trip assignment, as shown in Figure 7, was added to the 2040 baseline traffic volumes, as shown in Figure 12, to derive the 2040 plus Project traffic volumes. Figure 13 shows the 2040 plus Project traffic volumes.

8.2 Intersection Operations

An intersection LOS analysis was prepared using the HCM 6th Edition methodology for signalized intersections. As described in Chapter 1, Synchro (version 10) was utilized to calculate delay for signalized intersections. Table 9 shows the results of the 2040 plus Project conditions LOS analysis, detailed LOS worksheets are included in Appendix B.

Table 9. 2040 plus Project Intersection Level of Service

No.	Intersection	Control	LOS Method	2040 Baseline				2040 plus Project				Change in Delay		Significant Impact	
				AM Peak		*PM Peak*		*AM Peak*		*PM Peak*					
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]	*AM*	*PM*	*AM*	*PM*
1	Marinship Way-Easterby Street/ Bridgeway	Signalized	HCM	12.7	B	12.8	B	14.5	B	14.4	B	1.8	1.6	No	No
2	Spring Street/ Bridgeway	Signalized	HCM	4.6	A	4.4	A	4.7	A	4.5	A	0.1	0.1	No	No

Source: Dudek 2020
Note: HCM = Highway Capacity Manual
1 Delay in seconds per vehicle
2 Level of Service (LOS)

As shown in Table 9, all of the study area intersections are forecast to continue operating with satisfactory LOS (LOS C/D or better) under 2040 plus Project conditions during both peak hours.

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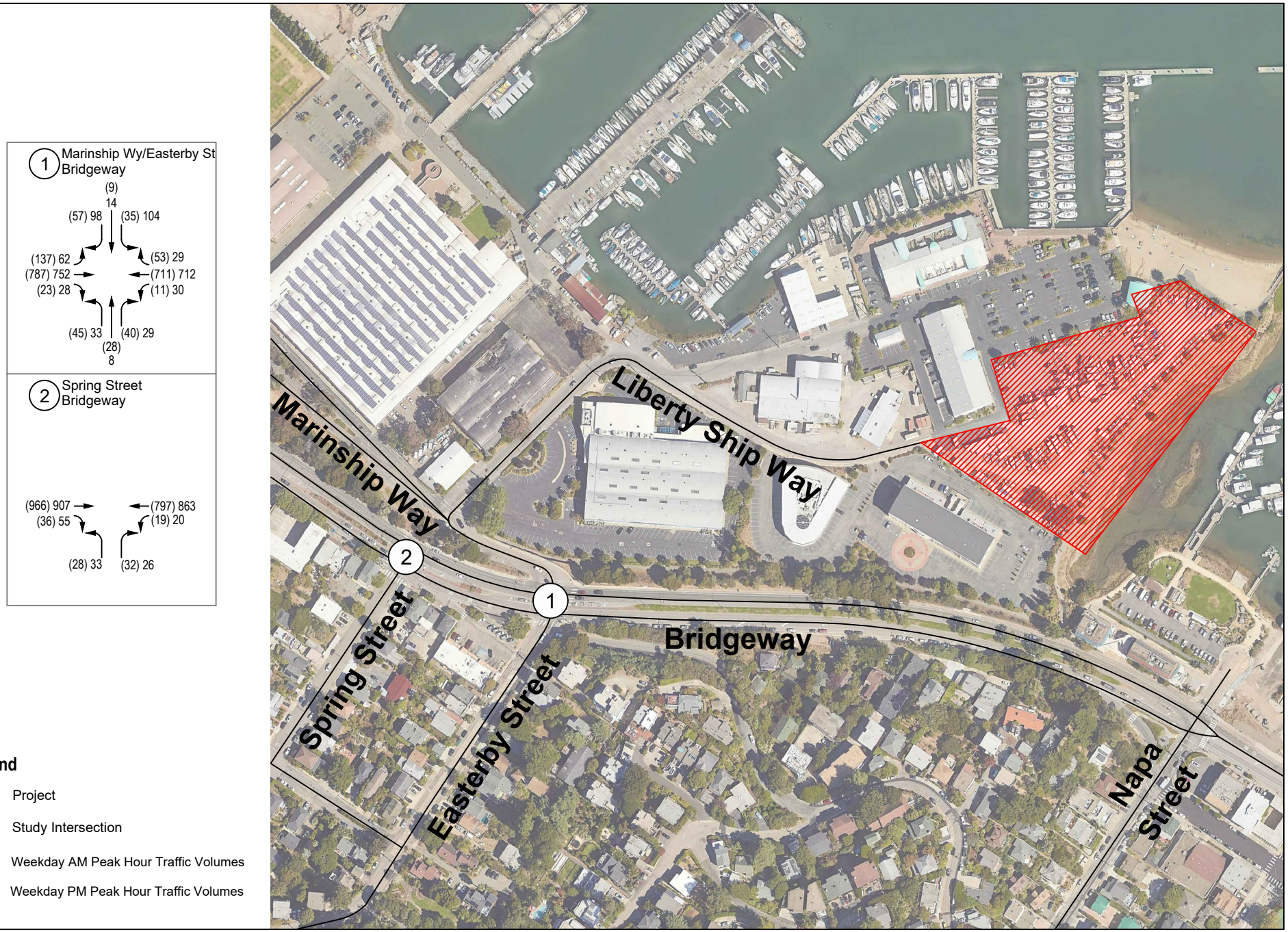

SOURCE: Google Earth 2019

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FIGURE 13

2040 plus Project Traffic Volumes

70–74 Liberty Ship Way Project

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9 Project Access and Queuing Analysis

9.1 Project Access

As shown on the project site plan (Figure 2), the existing Liberty Ship Way roadway provides primary site access, which creates a loop at the western edge of the project site that connects to Marinship Way. The primary ingress to the site would be via a one-way entry way from the southern portion of Liberty Ship Way, with a 20-foot wide path of vehicular travel. Although the ingress path along Liberty Ship Way provides sufficient roadway width per City requirements, the southernmost corner of the 60D Liberty Ship Way building abuts the northern edge of the roadway. A curb and guardrail system will be added to the northern edge of the roadway to reduce potential hazards, as shown in Appendix C. Additionally, pavement conditions along a segment adjacent to this building, west of the driveway to 30 Liberty Ship Way and east to the proposed project parking lot, are deteriorated and include visible old railroad tracks. It is recommended that this section of roadway be repaved to address existing pavement conditions. The internal circulation of the site would then transform into two-way traffic and facilitate parking lot drive aisles large enough to adequately accommodate delivery vehicles and have been approved by the fire department and emergency services for access.

Egress from the site would be possible via the parking lot and drive aisles of the existing parking areas north of the site, before connecting back to the northern section of the Liberty Ship Way loop Building A would be accessed directly via the most western drive aisle of the site and with the center drive aisles that would also connect Building B and Building C. Parking would be provided on all sides of Building A, and all sides of Building B except for the southern edge where the center drive aisle would be located. Building C would have parking primarily located along its western edge, and would have access to both parking areas near Building B and Building A. Additionally, accessible pedestrian routes, consistent with Americans with Disabilities Act (ADA) requirements, are provided throughout the project site.

All supporting information for project access, including truck turning radii, site circulation, and accessible path of travel is provided in Appendix C.

9.2 Queuing Analysis

A queuing analysis was prepared using SimTraffic 10 software, for all vehicular movements, to and from the project site, at the study area intersections. All Queuing reports are provided in Appendix B.

As shown in Tables 10 and 11, the calculated 95th percentile (design) queue for the Opening Year 2023 plus Project and 2040 plus Project conditions at all intersections do not exceed the storage lengths provided, except for the eastbound left turn lane at the Marinship Way-Easterby Street/Bridgeway intersection. The longest forecast queue exceeds the available storage length of 75 feet by 5 feet (less than one car length) in the AM and by 21 feet (approximately one car length) in the PM peak hour. In both baseline conditions, the queue exceedance is nearly identical when compared to the plus Project condition.

The City does not have a relevant significance criterion in place, however the exceedance of a storage lane may potentially create hazardous conditions for drivers proceeding eastbound at the intersection as the eastbound left turn lane overflows into the nearest through lane. Therefore, the project would contribute to this potentially unsafe condition. It is important to note that the General Plan's Appendix F Transportation Supporting Information document identifies the same queuing issue in both its existing and future year 2040 scenario. The recommendation concluded is the extension of the median at the intersection.

Therefore, a solution analyzed in this report (Appendix B), and identified as a recommended solution within the previous analysis conducted for the project (Appendix A), would be to extend the existing median in the eastbound approach approximately 55-feet, to create a 130-foot storage length for the eastbound left turn lane. The mitigation reports (Appendix B) show that the 95th percentile queue would not exceed the storage length under this mitigation. Since the project would contribute to the deficient condition, the project would be responsible for paying its fair share to enact this mitigation. A conceptual figure is shown with this mitigation as Figure 14.

Table 10. Opening Year 2023 plus Project Queuing Summary

Intersection	Movement	Vehicle Storage Length[1]	Opening Year 2023[2]		Opening Year 2023 plus Project[2]		Change in Queue		Exceeds Vehicle Storage Length?	
			AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Marinship Way-Easterby Street/ Bridgeway	EBL	75	111	60	116	81	5	21	**Yes**	**Yes**
	EBT[3]	240	183	125	220	150	37	25	No	No
	WBL	100	39	57	46	67	7	10	No	No
	WBT[3]	1,200	135	132	139	151	4	19	No	No
	NBLTR[3]	500	135	110	143	99	8	-11	No	No
	SBLT[3]	190	36	97	45	108	9	11	No	No
	SBR	150	52	70	49	74	-3	4	No	No
Spring Street/ Bridgeway	EBT[3]	250	121	119	139	118	18	-1	No	No
	WBL	75	25	32	27	35	2	3	No	No
	WBT[3]	215	112	117	103	109	-9	-8	No	No
	NBLR[3]	400	69	50	64	52	-5	2	No	No

Notes:
1 Measured in feet.
2 Based on 95th percentile (design) queue length in SimTraffic 10.
3 Length measured to nearest intersection.

Table 11. 2040 plus Project Queuing Summary

Intersection	Movement	Vehicle Storage Length[1]	2040 Baseline[2]		2040 plus Project[2]		Change in Queue		Exceeds Vehicle Storage Length?	
			AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Marinship Way-Easterby Street/Bridgeway	EBL	75	112	81	115	96	3	15	**Yes**	**Yes**
	EBT[3]	240	221	167	232	188	11	21	No	No
	WBL	100	38	68	41	59	3	-9	No	No
	WBT[3]	1,200	193	168	204	179	11	11	No	No
	NBLTR[3]	500	120	74	130	92	10	18	No	No
	SBLT[3]	190	72	155	67	141	-5	-14	No	No
	SBR	150	48	85	53	75	5	-10	No	No
Spring Street/Bridgeway	EBT[3]	250	177	182	204	180	27	-2	No	No
	WBL	75	53	52	48	60	-5	8	No	No
	WBT[3]	215	139	146	148	157	9	11	No	No
	NBLR[3]	400	75	80	87	83	12	3	No	No

Notes:

1 Measured in feet.

2 Based on 95th percentile (design) queue length in SimTraffic 10.

3 Length measured to nearest intersection.

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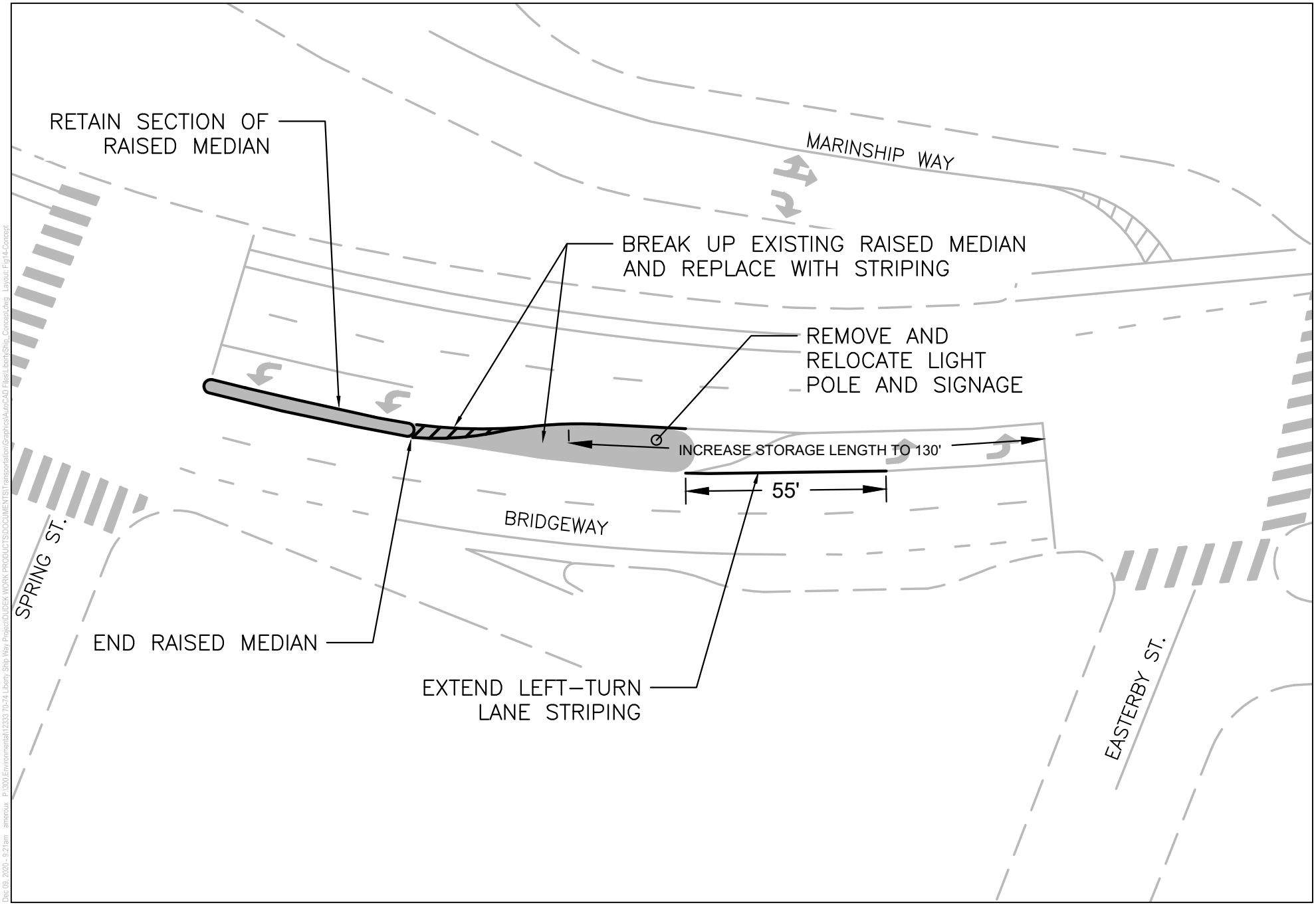

SOURCE: Bing Maps 2020

FIGURE 14

Bridgeway Median and Left Turn Pocket Concept at Marinship Way

70-74 Liberty Ship Way Project

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10 Vehicle Miles Travled (VMT) Analysis

10.1 Background

OPR has approved the addition of new Section 15064.3, "Determining the Significance of Transportation Impacts" to the state's CEQA Guidelines, compliance with which is required beginning July 1, 2020. The Updated CEQA Guidelines state that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts" and define VMT as "the amount and distance of automobile travel attributable to a project." Per OPR, heavy vehicle traffic is not required to be included in the estimation of a project's VMT.

Section 15064.3 (b)(1) *Criteria for Analyzing Transportation Impacts* includes presumptions that certain projects (including residential, retail, office, and mixed-use projects) proposed within one-half mile of an existing major transit stop or along a high-quality transit corridor will have a less-than-significant impact on VMT. If the specified presumption does not apply, VMT should be analyzed through a qualitative or quantitative analysis.

The process to evaluate projects against a VMT standard for CEQA-based traffic impact assessment is the same as the current process under an LOS-based approach; it involves defining a VMT baseline; setting thresholds for significant impacts; preparing traffic projections and evaluating projects against thresholds.

10.2 City of Sausalito General Plan VMT

The City of Sausalito is currently in the process of adopting VMT metric and formulating guidelines and significance criteria for transportation impact analysis. However, as part of City of Sausalito General Plan Update, the existing and projected VMT for the City per service population is provided using the Transportation Authority of Marin Demand Model (TAMDM). Based on TAMDM model, on an average, the City of Sausalito VMT per service population is 29.1 for the base year 2015 and 28.8 VMT per service population for the General Plan buildout year 2040.

Approximately 95% of the land uses under the 2020 General Plan would be located within 0.5 mile of the Bridgeway and Highway 101 corridors that provide high-quality transit service, it was assumed that implementation of the General Plan would result in less than significant VMT impacts. Any development facilitated by the General Plan is expected to result in a decrease in VMT per capita within the Sausalito Planning Area. Additionally, compliance with OPR guidance regarding the location of proposed development and compliance with the General Plan policies and programs in the Circulation and Parking Element would result in VMT per capita impacts that are below the applicable threshold of significance.

10.3 VMT Screening Analysis

The Technical Advisory and the General Plan Update suggests that the City may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing. The applicability of each of these screening criteria to the proposed project is described below.

- **Screening Threshold for Small Projects** (110 daily trips or less): Since the project generates more than 110 trips per day, it cannot be assumed to cause a less-than-significant transportation impact.

- **Map Based Screening for Residential and Office Projects:** Currently, the City does not have VMT maps that can be utilized to identify areas with low VMT for projects.
- **Presumption of Less Than Significant Impact for Affordable Residential Development:** The project does not propose affordable residential units and is not a residential development.
- **Presumption of Less Than Significant Impact Near Transit Stations:** Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop[2] or an existing stop along a high quality transit corridor[3] will have a less-than-significant impact on VMT. This presumption would not apply, if the project:
  - Has a Floor Area Ratio (FAR) of less than 0.75
  - Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking)
  - Is inconsistent with the Plan Bay Area 2040 and/or
  - Replaces affordable residential units with a smaller number of moderate- or high-income residential units

  The project site is located within one-half mile of several bus routes however, the service intervals of most of them are greater than 15 minutes during peak commute hours and therefore the project cannot be screened using the proximity to transit availability criteria. Although as mentioned above, the 2020 General Plan development has screened out of a significant VMT impact since approximately 95% of the land uses under the General Plan would be located within 0.5 mile of the Bridgeway and Highway 101 corridors that provide high-quality transit service.
- **Presumption of Less Than Significant Impact for Local Serving Retail and Other Uses:** For development projects, if the project leads to a net increase in provision of locally-serving retail and public facility uses, transportation impacts from such uses can be presumed to be less than significant. Generally, local-serving retail and similar uses less than 50,000 square feet can be assumed to cause a less-than-significant transportation impact because by improving destination proximity, local-serving developments tend to shorten trips and therefore reduce VMT. Since the project proposes a high percentage of local-serving uses such as marine commercial, restaurant and medical offices, it is not anticipated to increase VMT significantly. Further, since overall square footage of the project is less than 50,000 square feet, it would be screened out from further VMT analysis.

  The above mentioned VMT screening criteria for local serving retail and other uses, would apply to the project in addition to the high-quality transit screening applicable to the City's General Plan. Therefore, a detailed VMT analysis is not required.

2 Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.")

3 Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

10.4 VMT Reduction

Although the project does not require a detailed VMT analysis and would result in a less than significant impact, it is anticipated that it would have 84 employees. Therefore, the following program contained in the Circulation and Parking Element of the General Plan that assists in reducing VMT could apply to the project.

- Program CP-2.4.3 Requires the City to update the adopted Trip Reduction Ordinance to require employers with 50 or more employees to provide incentives for their employees to use transportation alternatives to get to work.

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11 Mitigation Measures

Based on the traffic analyses of the Existing plus Project and Opening Year 2023 plus Project conditions above, there are no significant intersection operations impacts identified. However, there are potentially hazardous conditions identified that would result in an exceedance of the storage length of the eastbound left turn lane at the Marinship Way-Easterby Street/Bridgeway intersection, therefore, mitigation measures are required.

TRAF-1 Prior to the issuance of a Certificate of Occupancy, the applicant shall pay its fair share towards, or construct the following improvement and be reimbursed based on its fair share costs of the improvement, as determined by the Public Works Director:

- Extend the existing median on the eastbound approach, approximately 55-feet, for a total eastbound left turn storage length of 130-feet.
- Re-optimize the signal timing and phasing for both intersections.

With the implementation of mitigation measure TRAF-1, the maximum 95th percentile queue of 129 feet would be accommodated within the newly extended 130-foot storage lane.

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12 Findings and Recommendations

Based on the traffic analysis of the proposed project, the following findings apply to study area intersection levels of service, project trip generation, project access, and project impacts:

- The proposed project would consist of three buildings, and would generate 706 daily trips, 59 AM peak hour trips (41 inbound and 18 outbound), and 71 PM peak hour trips (31 inbound and 40 outbound).
- Under Existing plus Project conditions, all study area intersections would continue to operate at acceptable LOS (LOS C/D or better)[4] under Existing plus Project conditions. Therefore, no inconsistencies with LOS policies would occur in the Existing plus Project condition for study area intersections.
- Under Opening Year 2023 plus Project conditions, all study area intersections are forecast to operate at acceptable LOS (LOS C/D or better) under Opening Year 2023 plus Project conditions. Therefore, no inconsistencies with LOS policies would occur in the Opening Year 2023 plus Project condition for study area intersections.
- Under 2040 plus Project conditions, all study area intersections are forecast to operate at acceptable LOS (LOS C/D or better) under 2040 plus Project conditions. Therefore, no inconsistencies with LOS policies would occur in the 2040 plus Project condition for study area intersections.
- No significant issues exist with the proposed project's ability to provide access to the site, and egress/ingress is adequate. As noted in the analysis, pavement conditions along one segment, west of the driveway to 30 Liberty Ship Way and east to the proposed project parking lot, are deteriorated and include visible (inoperable) railroad tracks. It is recommended that this section of roadway require street paving to address existing pavement conditions.
- As shown in the VMT screening analysis, the criteria for local serving retail and other uses would apply to the project in addition to its proximity to high-quality transit services per the City's General Plan. Therefore, a detailed VMT analysis is not required and the project can be presumed to have a less than significant impact to VMT.
- The 95th percentile queues forecast that in the Opening Year 2023 plus Project condition, will generally not exceed vehicle storage lengths, except for the eastbound left turn lane in both the AM and PM peak hours. While there are no significance criteria for queuing impacts, the queue can create potentially hazardous traffic conditions, especially for vehicles that block the eastbound through lane during a green light for through movements. Therefore, this is a potentially significant impact. The following mitigation measures have been evaluated. Either mitigation measure evaluated will safely reduce the impact of the project to a less than significant impact, however the recommended mitigation measure requires a less substantial change to the existing function of the intersection as a whole.
    - **TRAF-1** Prior to the issuance of a Certificate of Occupancy, the applicant shall pay its fair share towards, or construct the following improvement and be reimbursed based on its fair share costs of the improvement, as determined by the Public Works Director:
        - Extend the existing median on the eastbound approach, approximately 55-feet, for a total eastbound left turn storage length of 130-feet. The median shall be reconfigured per the City's specifications.

[4] For purposes of this analysis, LOS C is the minimum satisfactory LOS based on the current General Plan. Upon adoption of the 2020 General Plan, LOS D will become the minimum satisfactory LOS.

With the implementation of mitigation measure TRAF-1, the 95th percentile queue of 129 feet would be accommodated within the newly extended 130-foot storage lane.

Appendix A

Traffic Data from 2018 Analysis

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70 – 74 Libertyship Way

Traffic and Parking Analysis

Prepared for
ONDAROSA ARCHITECTS
Prepared by
Robert L. Harrison Transportation Planning
July 2018

Table 1
70-74 Libertyship Way Project
Project Trip Generation

Project Trips	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Vehicle Trip Generation	30	6	36	7	30	37	321
Person Trip Generation							
In Motor Vehicles	---	---	41	---	---	43	369
Transit	---	---	2	---	---	2	17
Bicycle	---	---	4	---	---	2	28
Walking	---	---	1	---	---	1	10
Total Person Trips	---	---	**48**	---	---	**48**	**424**

Source: Robert L. Harrison Transportation Planning

Traffic Operations

Traffic Volumes

Traffic was counted at the intersections of Bridgeway with Marinship Way / Easterby Street and with Spring Street on Wednesday April 18, 2018. The result of that traffic count is shown in Table 2. Also shown on Table 2 are the vehicle trips that would be added by the project to both of these intersections.

Intersection Level of Service

Level of Service (LOS) is a qualitative assessment of traffic conditions as perceived by motorists. LOS is reported in a range of letter grades from A to F. LOS A and B indicate little or no delay while LOS E and F indicate excessive congestion and delay.

Signalized Intersections. LOS at signalized intersections is determined using the methods as described in the Highway Capacity Manual (HCM) 2010 Chapter 18. The LOS operations analysis uses various characteristics such as traffic volume, lane geometry and signal phasing to estimate control delay per vehicle. Control delay is the portion of total delay attributed to signal operations and includes initial deceleration, queue move up time, stopped delay, and acceleration delay. The relationship between control delay at signalized intersections and LOS letter grade is shown in Table 3.

The calculation of LOS is shown in the Appendix to this report. The resultant existing condition and existing plus project condition LOS at the study intersections are shown in Table 4.

Table 2
70-74 Libertyship Way Project
Existing and Projected Traffic Volumes

Intersection	AM Peak Hour			PM Peak Hour		
	Existing April 2018	Project	Existing + Project	Existing April 2018	Project	Existing + Project
Bridgeway at Marinship Way / Easterby Street						
Northbound Left	11	---	11	23	---	23
Northbound Through	359	---	359	503	---	503
Northbound Right	37	7	44	16	2	18
Westbound Left	10	1	11	46	8	54
Westbound Through	3	0	3	13	2	15
Westbound Right	46	5	51	117	20	137
Southbound Left	104	19	123	24	4	28
Southbound Through	510	---	510	496	---	496
Southbound Right	11	---	11	30	---	30
Eastbound Left	45	---	45	36	---	36
Eastbound Through	23	4	27	6	0	6
Eastbound Right	47	---	47	33	---	33
Bridgeway at Spring Street						
Northbound Left	4	0	4	9	0	9
Northbound Through	421	5	426	649	20	669
Southbound Through	583	18	601	545	3	548
Southbound Right	18	---	18	51	---	51
Eastbound Left	18	---	18	2	---	2
Eastbound Right	36	1	37	31	0	31

Source: Robert L. Harrison Transportation Planning

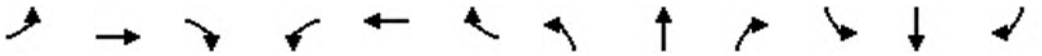
Table 3
Definition of Level of Service
Signalized Intersections

Level of Service	Description	Delay per Vehicle (Sec.)
A	Very short or minimal delay with short cycle lengths.	<10.0
B	Short delay with good progression and/or short cycle lengths.	>10.0 to 20.0
C	Average delay with fair progression and average cycle lengths.	>20.0 to 35.0
D	Significant delay with unfavorable progression, many cycles fail to clear.	>35.0 to 55.0
E	Excessive delay, poor progression, long cycle lengths, frequent cycle failures.	>55.0 to 80.0
F	Unacceptable delay, very long cycle lengths, nearly continuous cycle failures.	>80.0

Source: Transportation Research Board. *Highway Capacity Manual 2010.*

Appendix B

LOS and Queuing Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	530	11	11	373	38	47	24	49	10	3	48
Future Volume (veh/h)	108	530	11	11	373	38	47	24	49	10	3	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	616	13	13	434	44	55	28	57	12	3	56
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	2646	56	22	2178	220	108	45	70	171	36	175
Arrive On Green	0.09	0.74	0.74	0.01	0.67	0.67	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3559	75	1781	3259	329	512	411	633	946	324	1585
Grp Volume(v), veh/h	126	307	322	13	236	242	140	0	0	15	0	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1811	1556	0	0	1269	0	1585
Q Serve(g_s), s	6.7	5.2	5.2	0.7	4.9	5.0	6.9	0.0	0.0	0.0	0.0	3.2
Cycle Q Clear(g_c), s	6.7	5.2	5.2	0.7	4.9	5.0	8.5	0.0	0.0	0.8	0.0	3.2
Prop In Lane	1.00		0.04	1.00		0.18	0.39		0.41	0.80		1.00
Lane Grp Cap(c), veh/h	156	1321	1381	22	1188	1210	223	0	0	207	0	175
V/C Ratio(X)	0.81	0.23	0.23	0.60	0.20	0.20	0.63	0.00	0.00	0.07	0.00	0.32
Avail Cap(c_a), veh/h	275	1321	1381	275	1188	1210	448	0	0	413	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	3.9	3.9	47.7	6.2	6.2	42.1	0.0	0.0	38.7	0.0	39.8
Incr Delay (d2), s/veh	3.7	0.4	0.4	9.4	0.4	0.4	1.1	0.0	0.0	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.6	1.7	0.4	1.8	1.8	3.3	0.0	0.0	0.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	4.3	4.2	57.1	6.5	6.5	43.2	0.0	0.0	38.8	0.0	40.2
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		755			491			140			71	
Approach Delay, s/veh		11.4			7.9			43.2			39.9	
Approach LOS		B			A			D			D	

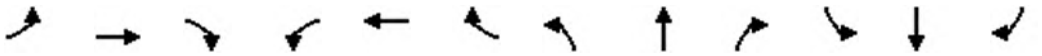
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	77.1		14.7	12.5	69.8		14.7				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	2.7	7.2		5.2	8.7	7.0		10.5				
Green Ext Time (p_c), s	0.0	7.3		0.0	0.0	5.4		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	606	19	5	460	19	37
Future Volume (veh/h)	606	19	5	460	19	37
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	645	20	5	489	20	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2848	88	9	3048	25	49
Arrive On Green	0.81	0.81	0.01	0.86	0.05	0.05
Sat Flow, veh/h	3612	109	1781	3647	550	1072
Grp Volume(v), veh/h	326	339	5	489	60	0
Grp Sat Flow(s),veh/h/ln	1777	1851	1781	1777	1650	0
Q Serve(g_s), s	4.0	4.0	0.3	2.1	3.4	0.0
Cycle Q Clear(g_c), s	4.0	4.0	0.3	2.1	3.4	0.0
Prop In Lane		0.06	1.00		0.33	0.65
Lane Grp Cap(c), veh/h	1438	1498	9	3048	75	0
V/C Ratio(X)	0.23	0.23	0.54	0.16	0.80	0.00
Avail Cap(c_a), veh/h	1438	1498	287	3048	444	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.99	0.99	1.00	0.00
Uniform Delay (d), s/veh	2.1	2.1	46.1	1.1	44.0	0.0
Incr Delay (d2), s/veh	0.4	0.4	16.6	0.1	7.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.0	0.2	0.3	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.4	2.4	62.7	1.2	51.0	0.0
LnGrp LOS	A	A	E	A	D	A
Approach Vol, veh/h	665			494	60	
Approach Delay, s/veh	2.4			1.8	51.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.5	80.3		8.2		84.8
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.3	6.0		5.4		4.1
Green Ext Time (p_c), s	0.0	7.9		0.0		6.2

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	536	34	24	523	17	37	6	34	48	14	122
Future Volume (veh/h)	27	536	34	24	523	17	37	6	34	48	14	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	576	37	26	562	18	40	6	37	52	15	131
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	2516	161	37	2602	83	96	27	54	172	42	164
Arrive On Green	0.02	0.74	0.74	0.02	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	3391	217	1781	3514	112	393	257	523	1024	403	1585
Grp Volume(v), veh/h	29	301	312	26	284	296	83	0	0	67	0	131
Grp Sat Flow(s),veh/h/ln	1781	1777	1831	1781	1777	1850	1173	0	0	1427	0	1585
Q Serve(g_s), s	1.6	5.1	5.1	1.4	4.8	4.8	3.0	0.0	0.0	0.0	0.0	7.8
Cycle Q Clear(g_c), s	1.6	5.1	5.1	1.4	4.8	4.8	7.2	0.0	0.0	4.2	0.0	7.8
Prop In Lane	1.00		0.12	1.00		0.06	0.48		0.45	0.78		1.00
Lane Grp Cap(c), veh/h	40	1318	1359	37	1316	1370	176	0	0	213	0	164
V/C Ratio(X)	0.73	0.23	0.23	0.70	0.22	0.22	0.47	0.00	0.00	0.31	0.00	0.80
Avail Cap(c_a), veh/h	275	1318	1359	275	1316	1370	394	0	0	438	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.1	3.9	3.9	47.2	3.9	3.9	42.2	0.0	0.0	40.8	0.0	42.5
Incr Delay (d2), s/veh	8.8	0.4	0.4	8.6	0.4	0.4	0.7	0.0	0.0	0.3	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.6	1.7	0.7	1.5	1.6	2.0	0.0	0.0	1.5	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	4.3	4.3	55.8	4.3	4.3	42.9	0.0	0.0	41.1	0.0	45.9
LnGrp LOS	E	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		642			606			83			198	
Approach Delay, s/veh		6.6			6.5			42.9			44.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	77.0		14.0	6.2	76.8		14.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	3.4	7.1		9.8	3.6	6.8		9.2				
Green Ext Time (p_c), s	0.0	7.1		0.2	0.0	6.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		13.4	
HCM 6th LOS		B	

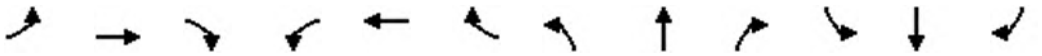
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	567	53	9	675	2	32
Future Volume (veh/h)	567	53	9	675	2	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	591	55	9	703	2	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2711	252	16	3115	2	39
Arrive On Green	0.82	0.82	0.01	0.88	0.03	0.03
Sat Flow, veh/h	3380	305	1781	3647	89	1468
Grp Volume(v), veh/h	319	327	9	703	36	0
Grp Sat Flow(s),veh/h/ln	1777	1815	1781	1777	1602	0
Q Serve(g_s), s	3.6	3.6	0.5	2.8	2.1	0.0
Cycle Q Clear(g_c), s	3.6	3.6	0.5	2.8	2.1	0.0
Prop In Lane		0.17	1.00		0.06	0.92
Lane Grp Cap(c), veh/h	1465	1497	16	3115	43	0
V/C Ratio(X)	0.22	0.22	0.57	0.23	0.84	0.00
Avail Cap(c_a), veh/h	1465	1497	287	3115	431	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.97	1.00	0.00
Uniform Delay (d), s/veh	1.7	1.7	45.9	0.9	45.1	0.0
Incr Delay (d2), s/veh	0.3	0.3	10.9	0.2	15.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8	0.3	0.2	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.1	2.1	56.8	1.0	60.0	0.0
LnGrp LOS	A	A	E	A	E	A
Approach Vol, veh/h	646			712	36	
Approach Delay, s/veh	2.1			1.8	60.0	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.8	81.7		6.5		86.5
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.5	5.6		4.1		4.8
Green Ext Time (p_c), s	0.0	7.7		0.0		9.5

Intersection Summary	
HCM 6th Ctrl Delay	3.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	530	11	11	373	44	47	28	49	13	5	61
Future Volume (veh/h)	139	530	11	11	373	44	47	28	49	13	5	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	616	13	13	434	51	55	33	57	15	6	71
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	2634	56	22	2063	241	107	52	70	160	54	180
Arrive On Green	0.11	0.74	0.74	0.01	0.64	0.64	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3559	75	1781	3205	375	491	454	612	847	474	1585
Grp Volume(v), veh/h	162	307	322	13	240	245	145	0	0	21	0	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1803	1557	0	0	1321	0	1585
Q Serve(g_s), s	8.6	5.3	5.3	0.7	5.4	5.4	7.1	0.0	0.0	0.0	0.0	4.0
Cycle Q Clear(g_c), s	8.6	5.3	5.3	0.7	5.4	5.4	8.8	0.0	0.0	1.1	0.0	4.0
Prop In Lane	1.00		0.04	1.00		0.21	0.38		0.39	0.71		1.00
Lane Grp Cap(c), veh/h	194	1315	1374	22	1144	1160	228	0	0	214	0	180
V/C Ratio(X)	0.84	0.23	0.23	0.60	0.21	0.21	0.64	0.00	0.00	0.10	0.00	0.39
Avail Cap(c_a), veh/h	275	1315	1374	275	1144	1160	448	0	0	420	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	4.0	4.0	47.7	7.1	7.1	41.9	0.0	0.0	38.5	0.0	39.9
Incr Delay (d2), s/veh	10.0	0.4	0.4	9.4	0.4	0.4	1.1	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	1.7	1.8	0.4	2.0	2.0	3.5	0.0	0.0	0.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	4.4	4.4	57.1	7.5	7.5	43.0	0.0	0.0	38.6	0.0	40.4
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		791			498			145			92	
Approach Delay, s/veh		14.2			8.8			43.0			40.0	
Approach LOS		B			A			D			D	

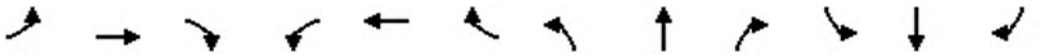
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	76.8		15.0	14.5	67.4		15.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	2.7	7.3		6.0	10.6	7.4		10.8				
Green Ext Time (p_c), s	0.0	7.3		0.1	0.0	5.5		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		16.7	
HCM 6th LOS		B	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	635	19	6	472	19	39
Future Volume (veh/h)	635	19	6	472	19	39
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	676	20	6	502	20	41
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2844	84	11	3042	25	51
Arrive On Green	0.81	0.81	0.01	0.86	0.05	0.05
Sat Flow, veh/h	3618	104	1781	3647	532	1090
Grp Volume(v), veh/h	341	355	6	502	62	0
Grp Sat Flow(s),veh/h/ln	1777	1852	1781	1777	1648	0
Q Serve(g_s), s	4.3	4.3	0.3	2.2	3.5	0.0
Cycle Q Clear(g_c), s	4.3	4.3	0.3	2.2	3.5	0.0
Prop In Lane		0.06	1.00		0.32	0.66
Lane Grp Cap(c), veh/h	1434	1494	11	3042	78	0
V/C Ratio(X)	0.24	0.24	0.55	0.17	0.80	0.00
Avail Cap(c_a), veh/h	1434	1494	287	3042	443	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.98	0.98	1.00	0.00
Uniform Delay (d), s/veh	2.1	2.1	46.1	1.1	43.9	0.0
Incr Delay (d2), s/veh	0.4	0.4	14.4	0.1	6.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	0.2	0.3	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.5	2.5	60.5	1.2	50.7	0.0
LnGrp LOS	A	A	E	A	D	A
Approach Vol, veh/h	696			508	62	
Approach Delay, s/veh	2.5			1.9	50.7	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.6	80.0		8.4		84.6
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.3	6.3		5.5		4.2
Green Ext Time (p_c), s	0.0	8.3		0.0		6.4

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	536	34	24	523	22	37	9	34	54	18	153
Future Volume (veh/h)	50	536	34	24	523	22	37	9	34	54	18	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	576	37	26	562	24	40	10	37	58	19	165
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	2443	157	37	2439	104	102	35	61	187	53	197
Arrive On Green	0.04	0.72	0.72	0.02	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3391	217	1781	3472	148	381	285	493	981	423	1585
Grp Volume(v), veh/h	54	301	312	26	287	299	87	0	0	77	0	165
Grp Sat Flow(s),veh/h/ln	1781	1777	1831	1781	1777	1844	1159	0	0	1404	0	1585
Q Serve(g_s), s	2.9	5.5	5.6	1.4	5.6	5.6	2.9	0.0	0.0	0.0	0.0	9.9
Cycle Q Clear(g_c), s	2.9	5.5	5.6	1.4	5.6	5.6	7.8	0.0	0.0	4.9	0.0	9.9
Prop In Lane	1.00		0.12	1.00		0.08	0.46		0.43	0.75		1.00
Lane Grp Cap(c), veh/h	69	1280	1320	37	1248	1295	199	0	0	240	0	197
V/C Ratio(X)	0.78	0.24	0.24	0.70	0.23	0.23	0.44	0.00	0.00	0.32	0.00	0.84
Avail Cap(c_a), veh/h	275	1280	1320	275	1248	1295	385	0	0	434	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.2	4.6	4.6	47.2	5.1	5.1	40.5	0.0	0.0	39.2	0.0	41.5
Incr Delay (d2), s/veh	6.7	0.4	0.4	8.6	0.4	0.4	0.6	0.0	0.0	0.3	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.8	1.9	0.7	1.9	2.0	2.0	0.0	0.0	1.7	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	5.0	5.0	55.8	5.6	5.5	41.1	0.0	0.0	39.5	0.0	45.0
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		667			612			87			242	
Approach Delay, s/veh		8.9			7.7			41.1			43.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	74.9		16.1	7.8	73.1		16.1				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	3.4	7.6		11.9	4.9	7.6		9.8				
Green Ext Time (p_c), s	0.0	7.1		0.2	0.0	6.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		15.3	
HCM 6th LOS		B	

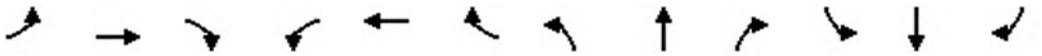
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	588	53	11	704	2	34
Future Volume (veh/h)	588	53	11	704	2	34
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	612	55	11	733	2	35
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2709	243	19	3109	2	42
Arrive On Green	0.82	0.82	0.01	0.87	0.03	0.03
Sat Flow, veh/h	3392	296	1781	3647	84	1474
Grp Volume(v), veh/h	329	338	11	733	38	0
Grp Sat Flow(s),veh/h/ln	1777	1817	1781	1777	1601	0
Q Serve(g_s), s	3.8	3.8	0.6	3.0	2.2	0.0
Cycle Q Clear(g_c), s	3.8	3.8	0.6	3.0	2.2	0.0
Prop In Lane		0.16	1.00		0.05	0.92
Lane Grp Cap(c), veh/h	1459	1492	19	3109	45	0
V/C Ratio(X)	0.23	0.23	0.58	0.24	0.84	0.00
Avail Cap(c_a), veh/h	1459	1492	287	3109	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.97	1.00	0.00
Uniform Delay (d), s/veh	1.8	1.8	45.8	0.9	45.0	0.0
Incr Delay (d2), s/veh	0.4	0.4	9.7	0.2	13.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.9	0.3	0.2	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.2	2.2	55.5	1.1	58.8	0.0
LnGrp LOS	A	A	E	A	E	A
Approach Vol, veh/h	667			744	38	
Approach Delay, s/veh	2.2			1.9	58.8	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.0	81.4		6.6		86.4
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.6	5.8		4.2		5.0
Green Ext Time (p_c), s	0.0	8.0		0.0		10.0

Intersection Summary	
HCM 6th Ctrl Delay	3.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	574	12	12	408	41	50	25	52	11	3	51
Future Volume (veh/h)	115	574	12	12	408	41	50	25	52	11	3	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	667	14	14	474	48	58	29	60	13	3	59
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	2626	55	23	2147	217	111	46	73	175	34	182
Arrive On Green	0.09	0.74	0.74	0.01	0.66	0.66	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3559	75	1781	3259	329	516	403	634	940	294	1585
Grp Volume(v), veh/h	134	333	348	14	258	264	147	0	0	16	0	59
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1811	1552	0	0	1234	0	1585
Q Serve(g_s), s	7.2	5.9	5.9	0.8	5.6	5.7	7.4	0.0	0.0	0.0	0.0	3.3
Cycle Q Clear(g_c), s	7.2	5.9	5.9	0.8	5.6	5.7	8.9	0.0	0.0	0.9	0.0	3.3
Prop In Lane	1.00		0.04	1.00		0.18	0.39		0.41	0.81		1.00
Lane Grp Cap(c), veh/h	164	1311	1370	23	1170	1193	230	0	0	209	0	182
V/C Ratio(X)	0.82	0.25	0.25	0.61	0.22	0.22	0.64	0.00	0.00	0.08	0.00	0.32
Avail Cap(c_a), veh/h	275	1311	1370	275	1170	1193	447	0	0	407	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	4.1	4.1	47.6	6.6	6.6	41.8	0.0	0.0	38.3	0.0	39.4
Incr Delay (d2), s/veh	3.7	0.5	0.4	9.1	0.4	0.4	1.1	0.0	0.0	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.9	2.0	0.4	2.0	2.1	3.5	0.0	0.0	0.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	4.6	4.5	56.8	7.0	7.0	42.9	0.0	0.0	38.4	0.0	39.8
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		815			536			147			75	
Approach Delay, s/veh		11.5			8.3			42.9			39.5	
Approach LOS		B			A			D			D	

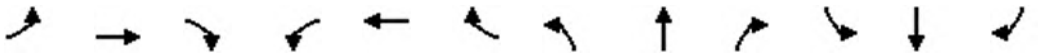
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	76.6		15.2	12.9	68.9		15.2				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	2.8	7.9		5.3	9.2	7.7		10.9				
Green Ext Time (p_c), s	0.0	8.0		0.1	0.0	6.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	654	20	5	500	20	40
Future Volume (veh/h)	654	20	5	500	20	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	696	21	5	532	21	43
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2837	86	9	3034	26	54
Arrive On Green	0.81	0.81	0.01	0.85	0.05	0.05
Sat Flow, veh/h	3615	106	1781	3647	532	1090
Grp Volume(v), veh/h	351	366	5	532	65	0
Grp Sat Flow(s),veh/h/ln	1777	1851	1781	1777	1648	0
Q Serve(g_s), s	4.5	4.5	0.3	2.4	3.6	0.0
Cycle Q Clear(g_c), s	4.5	4.5	0.3	2.4	3.6	0.0
Prop In Lane		0.06	1.00		0.32	0.66
Lane Grp Cap(c), veh/h	1431	1491	9	3034	82	0
V/C Ratio(X)	0.25	0.25	0.54	0.18	0.80	0.00
Avail Cap(c_a), veh/h	1431	1491	287	3034	443	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.98	0.98	1.00	0.00
Uniform Delay (d), s/veh	2.2	2.2	46.1	1.2	43.7	0.0
Incr Delay (d2), s/veh	0.4	0.4	16.4	0.1	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	0.2	0.3	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.6	2.6	62.6	1.3	50.2	0.0
LnGrp LOS	A	A	E	A	D	A
Approach Vol, veh/h	717			537	65	
Approach Delay, s/veh	2.6			1.9	50.2	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.5	79.9		8.6		84.4
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.3	6.5		5.6		4.4
Green Ext Time (p_c), s	0.0	8.6		0.0		6.8

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	588	36	28	572	19	40	7	37	52	14	129
Future Volume (veh/h)	29	588	36	28	572	19	40	7	37	52	14	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	632	39	30	615	20	43	8	40	56	15	139
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	2498	154	41	2579	84	94	28	53	173	39	172
Arrive On Green	0.02	0.73	0.73	0.02	0.73	0.73	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3400	210	1781	3513	114	361	261	488	982	358	1585
Grp Volume(v), veh/h	31	330	341	30	311	324	91	0	0	71	0	139
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1777	1850	1109	0	0	1340	0	1585
Q Serve(g_s), s	1.7	5.9	5.9	1.6	5.5	5.5	3.5	0.0	0.0	0.0	0.0	8.3
Cycle Q Clear(g_c), s	1.7	5.9	5.9	1.6	5.5	5.5	8.4	0.0	0.0	4.8	0.0	8.3
Prop In Lane	1.00		0.11	1.00		0.06	0.47		0.44	0.79		1.00
Lane Grp Cap(c), veh/h	42	1305	1346	41	1305	1358	175	0	0	212	0	172
V/C Ratio(X)	0.75	0.25	0.25	0.74	0.24	0.24	0.52	0.00	0.00	0.34	0.00	0.81
Avail Cap(c_a), veh/h	275	1305	1346	275	1305	1358	386	0	0	427	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.1	4.2	4.2	47.1	4.2	4.2	42.4	0.0	0.0	40.6	0.0	42.3
Incr Delay (d2), s/veh	9.2	0.5	0.4	9.2	0.4	0.4	0.9	0.0	0.0	0.3	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.9	2.0	0.8	1.8	1.8	2.2	0.0	0.0	1.6	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	4.6	4.6	56.3	4.6	4.6	43.2	0.0	0.0	40.9	0.0	45.7
LnGrp LOS	E	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		702			665			91			210	
Approach Delay, s/veh		6.9			6.9			43.2			44.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	76.3		14.5	6.3	76.2		14.5				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	3.6	7.9		10.3	3.7	7.5		10.4				
Green Ext Time (p_c), s	0.0	7.9		0.2	0.0	7.6		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		13.6	
HCM 6th LOS		B	

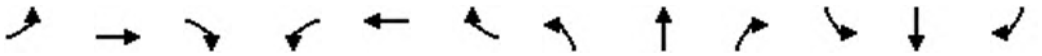
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	620	56	11	731	2	35
Future Volume (veh/h)	620	56	11	731	2	35
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	646	58	11	761	2	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2706	243	19	3106	2	43
Arrive On Green	0.82	0.82	0.01	0.87	0.03	0.03
Sat Flow, veh/h	3392	296	1781	3647	82	1477
Grp Volume(v), veh/h	348	356	11	761	39	0
Grp Sat Flow(s),veh/h/ln	1777	1817	1781	1777	1600	0
Q Serve(g_s), s	4.1	4.1	0.6	3.2	2.3	0.0
Cycle Q Clear(g_c), s	4.1	4.1	0.6	3.2	2.3	0.0
Prop In Lane		0.16	1.00		0.05	0.92
Lane Grp Cap(c), veh/h	1458	1491	19	3106	47	0
V/C Ratio(X)	0.24	0.24	0.58	0.24	0.84	0.00
Avail Cap(c_a), veh/h	1458	1491	287	3106	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.97	1.00	0.00
Uniform Delay (d), s/veh	1.9	1.9	45.8	0.9	44.9	0.0
Incr Delay (d2), s/veh	0.4	0.4	9.7	0.2	13.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	0.3	0.3	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.3	2.2	55.5	1.1	58.3	0.0
LnGrp LOS	A	A	E	A	E	A
Approach Vol, veh/h	704			772	39	
Approach Delay, s/veh	2.2			1.9	58.3	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.0	81.3		6.7		86.3
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.6	6.1		4.3		5.2
Green Ext Time (p_c), s	0.0	8.5		0.0		10.5

Intersection Summary	
HCM 6th Ctrl Delay	3.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	574	12	12	408	47	50	29	52	14	5	64
Future Volume (veh/h)	146	574	12	12	408	47	50	29	52	14	5	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	170	667	14	14	474	55	58	34	60	16	6	74
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	2614	55	23	2036	235	110	53	73	164	52	188
Arrive On Green	0.11	0.73	0.73	0.01	0.63	0.63	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3559	75	1781	3210	371	495	445	613	845	439	1585
Grp Volume(v), veh/h	170	333	348	14	262	267	152	0	0	22	0	74
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1804	1553	0	0	1284	0	1585
Q Serve(g_s), s	9.1	5.9	5.9	0.8	6.1	6.2	7.5	0.0	0.0	0.0	0.0	4.2
Cycle Q Clear(g_c), s	9.1	5.9	5.9	0.8	6.1	6.2	9.2	0.0	0.0	1.2	0.0	4.2
Prop In Lane	1.00		0.04	1.00		0.21	0.38		0.39	0.73		1.00
Lane Grp Cap(c), veh/h	202	1305	1364	23	1127	1144	235	0	0	216	0	188
V/C Ratio(X)	0.84	0.26	0.26	0.61	0.23	0.23	0.65	0.00	0.00	0.10	0.00	0.39
Avail Cap(c_a), veh/h	275	1305	1364	275	1127	1144	447	0	0	414	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.2	4.2	4.2	47.6	7.6	7.6	41.7	0.0	0.0	38.2	0.0	39.5
Incr Delay (d2), s/veh	11.8	0.5	0.4	9.1	0.5	0.5	1.1	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	1.9	2.0	0.4	2.3	2.3	3.6	0.0	0.0	0.5	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	4.7	4.6	56.8	8.1	8.1	42.8	0.0	0.0	38.2	0.0	40.0
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		851			543			152			96	
Approach Delay, s/veh		14.5			9.3			42.8			39.6	
Approach LOS		B			A			D			D	

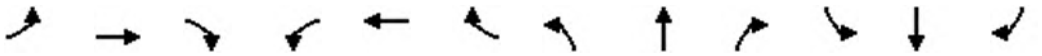
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	76.3		15.5	15.0	66.5		15.5				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	2.8	7.9		6.2	11.1	8.2		11.2				
Green Ext Time (p_c), s	0.0	8.0		0.1	0.0	6.1		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	683	20	6	512	20	42
Future Volume (veh/h)	683	20	6	512	20	42
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	727	21	6	545	21	45
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2832	82	11	3028	26	56
Arrive On Green	0.80	0.80	0.01	0.85	0.05	0.05
Sat Flow, veh/h	3621	102	1781	3647	516	1105
Grp Volume(v), veh/h	366	382	6	545	67	0
Grp Sat Flow(s),veh/h/ln	1777	1852	1781	1777	1646	0
Q Serve(g_s), s	4.8	4.8	0.3	2.5	3.7	0.0
Cycle Q Clear(g_c), s	4.8	4.8	0.3	2.5	3.7	0.0
Prop In Lane		0.05	1.00		0.31	0.67
Lane Grp Cap(c), veh/h	1427	1487	11	3028	84	0
V/C Ratio(X)	0.26	0.26	0.55	0.18	0.80	0.00
Avail Cap(c_a), veh/h	1427	1487	287	3028	442	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.98	0.98	1.00	0.00
Uniform Delay (d), s/veh	2.3	2.3	46.1	1.2	43.6	0.0
Incr Delay (d2), s/veh	0.4	0.4	14.4	0.1	6.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	0.2	0.4	1.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.7	2.7	60.5	1.3	49.9	0.0
LnGrp LOS	A	A	E	A	D	A
Approach Vol, veh/h	748			551	67	
Approach Delay, s/veh	2.7			2.0	49.9	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.6	79.7		8.8		84.2
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.3	6.8		5.7		4.5
Green Ext Time (p_c), s	0.0	9.1		0.0		7.0

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	588	36	28	572	24	40	10	37	58	18	160
Future Volume (veh/h)	52	588	36	28	572	24	40	10	37	58	18	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	632	39	30	615	26	43	11	40	62	19	172
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	2428	150	41	2420	102	100	36	60	188	49	204
Arrive On Green	0.04	0.71	0.71	0.02	0.70	0.70	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3400	210	1781	3474	147	356	276	469	951	383	1585
Grp Volume(v), veh/h	56	330	341	30	314	327	94	0	0	81	0	172
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1777	1844	1101	0	0	1334	0	1585
Q Serve(g_s), s	3.0	6.3	6.3	1.6	6.3	6.3	3.4	0.0	0.0	0.0	0.0	10.3
Cycle Q Clear(g_c), s	3.0	6.3	6.3	1.6	6.3	6.3	8.9	0.0	0.0	5.5	0.0	10.3
Prop In Lane	1.00		0.11	1.00		0.08	0.46		0.43	0.77		1.00
Lane Grp Cap(c), veh/h	72	1269	1309	41	1238	1284	196	0	0	238	0	204
V/C Ratio(X)	0.78	0.26	0.26	0.74	0.25	0.25	0.48	0.00	0.00	0.34	0.00	0.84
Avail Cap(c_a), veh/h	275	1269	1309	275	1238	1284	376	0	0	424	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	4.9	4.9	47.1	5.4	5.4	40.7	0.0	0.0	39.1	0.0	41.3
Incr Delay (d2), s/veh	6.5	0.5	0.5	9.2	0.5	0.5	0.7	0.0	0.0	0.3	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.1	2.2	0.8	2.2	2.3	2.2	0.0	0.0	1.8	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	5.4	5.3	56.3	5.9	5.9	41.3	0.0	0.0	39.4	0.0	44.8
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		727			671			94			253	
Approach Delay, s/veh		9.0			8.2			41.3			43.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	74.3		16.5	7.9	72.6		16.5				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	3.6	8.3		12.3	5.0	8.3		10.9				
Green Ext Time (p_c), s	0.0	7.8		0.2	0.0	7.6		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		15.4	
HCM 6th LOS		B	

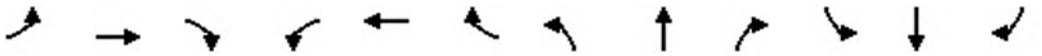
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	641	56	13	760	2	37
Future Volume (veh/h)	641	56	13	760	2	37
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	668	58	14	792	2	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2698	234	23	3097	2	47
Arrive On Green	0.82	0.82	0.01	0.87	0.03	0.03
Sat Flow, veh/h	3402	287	1781	3647	76	1485
Grp Volume(v), veh/h	358	368	14	792	42	0
Grp Sat Flow(s),veh/h/ln	1777	1819	1781	1777	1599	0
Q Serve(g_s), s	4.3	4.3	0.7	3.4	2.4	0.0
Cycle Q Clear(g_c), s	4.3	4.3	0.7	3.4	2.4	0.0
Prop In Lane		0.16	1.00		0.05	0.93
Lane Grp Cap(c), veh/h	1449	1483	23	3097	51	0
V/C Ratio(X)	0.25	0.25	0.60	0.26	0.83	0.00
Avail Cap(c_a), veh/h	1449	1483	287	3097	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.96	0.96	1.00	0.00
Uniform Delay (d), s/veh	2.0	2.0	45.7	1.0	44.8	0.0
Incr Delay (d2), s/veh	0.4	0.4	8.6	0.2	12.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.0	0.4	0.3	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.4	2.4	54.2	1.2	56.8	0.0
LnGrp LOS	A	A	D	A	E	A
Approach Vol, veh/h	726			806	42	
Approach Delay, s/veh	2.4			2.1	56.8	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.2	80.8		6.9		86.1
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	2.7	6.3		4.4		5.4
Green Ext Time (p_c), s	0.0	8.8		0.0		11.1

Intersection Summary	
HCM 6th Ctrl Delay	3.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	787	23	11	711	47	45	24	40	32	7	44
Future Volume (veh/h)	106	787	23	11	711	47	45	24	40	32	7	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	915	27	13	827	55	52	28	47	37	8	51
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	2604	77	22	2251	150	104	49	59	178	32	182
Arrive On Green	0.09	0.74	0.74	0.01	0.67	0.67	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3524	104	1781	3382	225	446	423	511	957	279	1585
Grp Volume(v), veh/h	123	461	481	13	434	448	127	0	0	45	0	51
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1830	1380	0	0	1236	0	1585
Q Serve(g_s), s	6.6	8.9	8.9	0.7	10.5	10.5	5.8	0.0	0.0	0.0	0.0	2.9
Cycle Q Clear(g_c), s	6.6	8.9	8.9	0.7	10.5	10.5	9.0	0.0	0.0	3.2	0.0	2.9
Prop In Lane	1.00		0.06	1.00		0.12	0.41		0.37	0.82		1.00
Lane Grp Cap(c), veh/h	152	1313	1368	22	1183	1218	211	0	0	210	0	182
V/C Ratio(X)	0.81	0.35	0.35	0.60	0.37	0.37	0.60	0.00	0.00	0.21	0.00	0.28
Avail Cap(c_a), veh/h	275	1313	1368	275	1183	1218	429	0	0	409	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	4.5	4.5	47.7	7.2	7.2	42.2	0.0	0.0	39.3	0.0	39.3
Incr Delay (d2), s/veh	3.6	0.7	0.7	9.4	0.9	0.9	1.0	0.0	0.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.8	3.0	0.4	3.8	3.9	3.0	0.0	0.0	1.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	5.2	5.1	57.1	8.1	8.0	43.2	0.0	0.0	39.5	0.0	39.6
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		1065			895			127			96	
Approach Delay, s/veh		10.0			8.8			43.2			39.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	76.7		15.1	12.3	69.6		15.1				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	2.7	10.9		5.2	8.6	12.5		11.0				
Green Ext Time (p_c), s	0.0	11.6		0.1	0.0	11.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		12.7	
HCM 6th LOS		B	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	937	36	18	785	28	30
Future Volume (veh/h)	937	36	18	785	28	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	997	38	19	835	30	32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2779	106	30	3041	38	40
Arrive On Green	0.80	0.80	0.02	0.86	0.05	0.05
Sat Flow, veh/h	3584	133	1781	3647	799	852
Grp Volume(v), veh/h	508	527	19	835	63	0
Grp Sat Flow(s),veh/h/ln	1777	1846	1781	1777	1677	0
Q Serve(g_s), s	7.6	7.6	1.0	4.1	3.5	0.0
Cycle Q Clear(g_c), s	7.6	7.6	1.0	4.1	3.5	0.0
Prop In Lane		0.07	1.00		0.48	0.51
Lane Grp Cap(c), veh/h	1415	1470	30	3041	79	0
V/C Ratio(X)	0.36	0.36	0.64	0.27	0.79	0.00
Avail Cap(c_a), veh/h	1415	1470	287	3041	451	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.93	0.93	1.00	0.00
Uniform Delay (d), s/veh	2.7	2.7	45.4	1.3	43.8	0.0
Incr Delay (d2), s/veh	0.7	0.7	7.6	0.2	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.0	0.5	0.6	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	3.4	53.1	1.5	50.3	0.0
LnGrp LOS	A	A	D	A	D	A
Approach Vol, veh/h	1035			854	63	
Approach Delay, s/veh	3.4			2.6	50.3	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.6	79.0		8.4		84.6
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	3.0	9.6		5.5		6.1
Green Ext Time (p_c), s	0.0	13.3		0.0		11.8

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	752	28	30	712	24	33	5	29	98	10	67
Future Volume (veh/h)	39	752	28	30	712	24	33	5	29	98	10	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	809	30	32	766	26	35	5	31	105	11	72
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	2435	90	42	2422	82	87	25	44	217	19	230
Arrive On Green	0.03	0.70	0.70	0.02	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3494	130	1781	3507	119	217	172	302	1006	132	1585
Grp Volume(v), veh/h	42	411	428	32	388	404	71	0	0	116	0	72
Grp Sat Flow(s),veh/h/ln	1781	1777	1847	1781	1777	1849	691	0	0	1138	0	1585
Q Serve(g_s), s	2.3	8.9	8.9	1.7	8.4	8.4	2.2	0.0	0.0	0.0	0.0	3.9
Cycle Q Clear(g_c), s	2.3	8.9	8.9	1.7	8.4	8.4	12.0	0.0	0.0	9.8	0.0	3.9
Prop In Lane	1.00		0.07	1.00		0.06	0.49		0.44	0.91		1.00
Lane Grp Cap(c), veh/h	53	1238	1287	42	1227	1277	156	0	0	236	0	230
V/C Ratio(X)	0.79	0.33	0.33	0.75	0.32	0.32	0.46	0.00	0.00	0.49	0.00	0.31
Avail Cap(c_a), veh/h	275	1238	1287	275	1227	1277	319	0	0	394	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.7	5.8	5.8	47.1	5.9	5.9	40.3	0.0	0.0	39.6	0.0	37.1
Incr Delay (d2), s/veh	8.7	0.7	0.7	9.6	0.7	0.7	0.8	0.0	0.0	0.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	3.2	0.9	2.9	3.1	1.7	0.0	0.0	2.7	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	6.5	6.5	56.6	6.6	6.6	41.1	0.0	0.0	40.1	0.0	37.4
LnGrp LOS	E	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		881			824			71			188	
Approach Delay, s/veh		8.8			8.5			41.1			39.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	72.6		18.1	6.9	72.0		18.1				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	3.7	10.9		11.8	4.3	10.4		14.0				
Green Ext Time (p_c), s	0.0	10.0		0.2	0.0	9.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		12.8	
HCM 6th LOS		B	

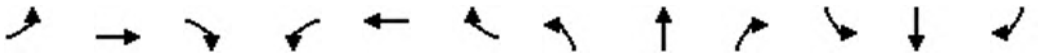
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	886	55	18	834	33	24
Future Volume (veh/h)	886	55	18	834	33	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	923	57	19	869	34	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2715	168	30	3051	43	32
Arrive On Green	0.80	0.80	0.02	0.86	0.04	0.04
Sat Flow, veh/h	3493	210	1781	3647	961	706
Grp Volume(v), veh/h	482	498	19	869	60	0
Grp Sat Flow(s),veh/h/ln	1777	1833	1781	1777	1695	0
Q Serve(g_s), s	7.0	7.0	1.0	4.3	3.3	0.0
Cycle Q Clear(g_c), s	7.0	7.0	1.0	4.3	3.3	0.0
Prop In Lane		0.11	1.00		0.57	0.42
Lane Grp Cap(c), veh/h	1419	1464	30	3051	76	0
V/C Ratio(X)	0.34	0.34	0.64	0.28	0.79	0.00
Avail Cap(c_a), veh/h	1419	1464	287	3051	456	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.96	0.96	1.00	0.00
Uniform Delay (d), s/veh	2.6	2.6	45.4	1.2	44.0	0.0
Incr Delay (d2), s/veh	0.7	0.6	7.9	0.2	6.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.8	0.5	0.5	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	3.2	53.3	1.5	50.7	0.0
LnGrp LOS	A	A	D	A	D	A
Approach Vol, veh/h	980			888	60	
Approach Delay, s/veh	3.2			2.6	50.7	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.6	79.3		8.2		84.8
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	3.0	9.0		5.3		6.3
Green Ext Time (p_c), s	0.0	12.5		0.0		12.4

Intersection Summary	
HCM 6th Ctrl Delay	4.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	787	23	11	711	53	45	28	40	35	9	57
Future Volume (veh/h)	137	787	23	11	711	53	45	28	40	35	9	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	915	27	13	827	62	52	33	47	41	10	66
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	2582	76	22	2138	160	102	56	58	177	36	192
Arrive On Green	0.11	0.73	0.73	0.01	0.64	0.64	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3524	104	1781	3351	251	411	459	481	911	300	1585
Grp Volume(v), veh/h	159	461	481	13	438	451	132	0	0	51	0	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1825	1352	0	0	1210	0	1585
Q Serve(g_s), s	8.5	9.1	9.1	0.7	11.5	11.5	5.8	0.0	0.0	0.0	0.0	3.7
Cycle Q Clear(g_c), s	8.5	9.1	9.1	0.7	11.5	11.5	9.5	0.0	0.0	3.7	0.0	3.7
Prop In Lane	1.00		0.06	1.00		0.14	0.39		0.36	0.80		1.00
Lane Grp Cap(c), veh/h	191	1302	1357	22	1134	1164	215	0	0	214	0	192
V/C Ratio(X)	0.83	0.35	0.35	0.60	0.39	0.39	0.61	0.00	0.00	0.24	0.00	0.34
Avail Cap(c_a), veh/h	275	1302	1357	275	1134	1164	424	0	0	405	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.5	4.7	4.7	47.7	8.4	8.4	41.9	0.0	0.0	39.0	0.0	39.1
Incr Delay (d2), s/veh	8.8	0.7	0.7	9.4	1.0	1.0	1.1	0.0	0.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.9	3.1	0.4	4.3	4.4	3.2	0.0	0.0	1.1	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	5.4	5.4	57.1	9.4	9.4	42.9	0.0	0.0	39.2	0.0	39.5
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		1101			902			132			117	
Approach Delay, s/veh		12.0			10.1			42.9			39.4	
Approach LOS		B			B			D			D	

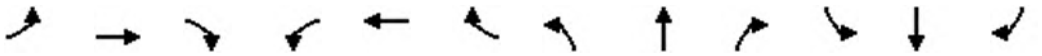
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	76.1		15.7	14.4	66.9		15.7				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	2.7	11.1		5.7	10.5	13.5		11.5				
Green Ext Time (p_c), s	0.0	11.5		0.1	0.0	11.0		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	966	36	19	797	28	32
Future Volume (veh/h)	966	36	19	797	28	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1028	38	20	848	30	34
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2774	103	31	3036	38	43
Arrive On Green	0.79	0.79	0.02	0.85	0.05	0.05
Sat Flow, veh/h	3588	129	1781	3647	773	876
Grp Volume(v), veh/h	523	543	20	848	65	0
Grp Sat Flow(s),veh/h/ln	1777	1847	1781	1777	1674	0
Q Serve(g_s), s	8.0	8.0	1.0	4.2	3.6	0.0
Cycle Q Clear(g_c), s	8.0	8.0	1.0	4.2	3.6	0.0
Prop In Lane		0.07	1.00		0.46	0.52
Lane Grp Cap(c), veh/h	1411	1466	31	3036	82	0
V/C Ratio(X)	0.37	0.37	0.65	0.28	0.79	0.00
Avail Cap(c_a), veh/h	1411	1466	287	3036	450	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.92	0.92	1.00	0.00
Uniform Delay (d), s/veh	2.8	2.8	45.4	1.3	43.8	0.0
Incr Delay (d2), s/veh	0.7	0.7	7.5	0.2	6.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.2	0.5	0.6	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	3.5	52.9	1.5	50.1	0.0
LnGrp LOS	A	A	D	A	D	A
Approach Vol, veh/h	1066			868	65	
Approach Delay, s/veh	3.5			2.7	50.1	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.6	78.8		8.6		84.4
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	3.0	10.0		5.6		6.2
Green Ext Time (p_c), s	0.0	13.7		0.0		12.0

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	752	28	30	712	29	33	8	29	104	14	98
Future Volume (veh/h)	62	752	28	30	712	29	33	8	29	104	14	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	809	30	32	766	31	35	9	31	112	15	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	2382	88	42	2288	93	84	32	43	220	24	254
Arrive On Green	0.05	0.68	0.68	0.02	0.66	0.66	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3494	130	1781	3481	141	185	197	269	938	152	1585
Grp Volume(v), veh/h	67	411	428	32	391	406	75	0	0	127	0	105
Grp Sat Flow(s),veh/h/ln	1781	1777	1847	1781	1777	1845	651	0	0	1090	0	1585
Q Serve(g_s), s	3.6	9.3	9.3	1.7	9.4	9.4	2.2	0.0	0.0	0.0	0.0	5.8
Cycle Q Clear(g_c), s	3.6	9.3	9.3	1.7	9.4	9.4	13.5	0.0	0.0	11.3	0.0	5.8
Prop In Lane	1.00		0.07	1.00		0.08	0.47		0.41	0.88		1.00
Lane Grp Cap(c), veh/h	86	1211	1259	42	1168	1212	159	0	0	245	0	254
V/C Ratio(X)	0.78	0.34	0.34	0.75	0.33	0.33	0.47	0.00	0.00	0.52	0.00	0.41
Avail Cap(c_a), veh/h	275	1211	1259	275	1168	1212	299	0	0	382	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.6	6.4	6.4	47.1	7.3	7.3	39.3	0.0	0.0	38.8	0.0	36.6
Incr Delay (d2), s/veh	5.2	0.7	0.7	9.6	0.8	0.7	0.8	0.0	0.0	0.6	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.3	3.4	0.9	3.4	3.6	1.8	0.0	0.0	2.9	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	7.1	7.1	56.6	8.1	8.1	40.1	0.0	0.0	39.5	0.0	37.0
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	D
Approach Vol, veh/h		906			829			75			232	
Approach Delay, s/veh		10.3			9.9			40.1			38.4	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	71.1		19.6	8.7	68.7		19.6				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	15.0	40.0		25.0	15.0	44.0		25.0				
Max Q Clear Time (g_c+I1), s	3.7	11.3		13.3	5.6	11.4		15.5				
Green Ext Time (p_c), s	0.0	10.0		0.3	0.0	9.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		14.4	
HCM 6th LOS		B	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	907	55	20	863	33	26
Future Volume (veh/h)	907	55	20	863	33	26
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	945	57	21	899	34	27
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2710	163	32	3045	43	34
Arrive On Green	0.80	0.80	0.02	0.86	0.05	0.05
Sat Flow, veh/h	3498	205	1781	3647	928	737
Grp Volume(v), veh/h	493	509	21	899	62	0
Grp Sat Flow(s),veh/h/ln	1777	1833	1781	1777	1691	0
Q Serve(g_s), s	7.3	7.3	1.1	4.5	3.4	0.0
Cycle Q Clear(g_c), s	7.3	7.3	1.1	4.5	3.4	0.0
Prop In Lane		0.11	1.00		0.55	0.44
Lane Grp Cap(c), veh/h	1414	1459	32	3045	78	0
V/C Ratio(X)	0.35	0.35	0.65	0.30	0.79	0.00
Avail Cap(c_a), veh/h	1414	1459	287	3045	455	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.95	1.00	0.00
Uniform Delay (d), s/veh	2.7	2.7	45.4	1.3	43.9	0.0
Incr Delay (d2), s/veh	0.7	0.7	7.7	0.2	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.9	0.5	0.6	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	3.3	53.1	1.5	50.4	0.0
LnGrp LOS	A	A	D	A	D	A
Approach Vol, veh/h	1002			920	62	
Approach Delay, s/veh	3.4			2.7	50.4	
Approach LOS	A			A	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.7	79.0		8.3		84.7
Change Period (Y+Rc), s	4.0	5.0		4.0		5.0
Max Green Setting (Gmax), s	15.0	40.0		25.0		44.0
Max Q Clear Time (g_c+I1), s	3.1	9.3		5.4		6.5
Green Ext Time (p_c), s	0.0	12.8		0.0		12.9

Intersection Summary	
HCM 6th Ctrl Delay	4.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	99	238	215	71	163	131	172	43	63
Average Queue (ft)	70	76	45	10	68	32	71	12	25
95th Queue (ft)	111	183	133	39	135	88	135	36	52
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0	0						
Queuing Penalty (veh)		1	0						
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	18	2			3				
Queuing Penalty (veh)	52	3			0				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	UL	T	T	LR
Maximum Queue (ft)	138	93	48	166	136	86
Average Queue (ft)	53	19	4	38	27	33
95th Queue (ft)	121	60	25	112	90	69
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				2		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 56

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	86	150	131	81	163	131	142	124	85
Average Queue (ft)	24	56	38	23	67	27	54	48	41
95th Queue (ft)	60	125	100	57	132	83	110	97	70
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	1	3		0	2			0	
Queuing Penalty (veh)	3	1		0	1			0	

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	150	109	34	172	137	58
Average Queue (ft)	48	25	9	40	32	21
95th Queue (ft)	119	77	32	117	101	50
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 5

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	99	244	220	69	169	133	180	55	58
Average Queue (ft)	80	110	67	12	74	37	75	16	26
95th Queue (ft)	116	252	188	46	139	92	143	45	49
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		1	0						
Queuing Penalty (veh)		5	0						
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	29	2			3				
Queuing Penalty (veh)	84	3			0				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	UL	T	T	LR
Maximum Queue (ft)	161	107	43	132	114	73
Average Queue (ft)	68	24	6	37	24	34
95th Queue (ft)	139	74	27	103	79	64
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 93

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	97	180	167	115	192	131	125	130	94
Average Queue (ft)	41	68	44	25	74	31	47	60	46
95th Queue (ft)	81	150	116	67	151	85	99	108	74
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0	0					0	
Queuing Penalty (veh)		0	0					0	
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	3	4			3			0	
Queuing Penalty (veh)	9	2			1			0	

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	167	114	39	148	130	59
Average Queue (ft)	46	24	10	35	30	25
95th Queue (ft)	118	76	35	109	93	52
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 13

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	100	249	228	76	236	180	153	97	50
Average Queue (ft)	71	99	68	9	105	60	62	33	22
95th Queue (ft)	112	221	171	38	193	145	120	72	48
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		1	0						
Queuing Penalty (veh)		4	0						
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	18	5			7				
Queuing Penalty (veh)	73	6			1				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	UL	T	T	LR
Maximum Queue (ft)	219	187	78	187	168	101
Average Queue (ft)	88	49	18	54	42	36
95th Queue (ft)	177	131	53	139	120	75
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				2		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 84

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	99	204	177	106	200	160	99	190	138
Average Queue (ft)	37	76	59	25	86	42	34	82	34
95th Queue (ft)	81	167	139	68	168	113	74	155	85
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0	0					0	
Queuing Penalty (veh)		1	0					0	
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	2	6		0	4			1	0
Queuing Penalty (veh)	8	2		0	1			1	0

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	220	165	91	186	179	104
Average Queue (ft)	83	47	16	57	41	40
95th Queue (ft)	182	129	52	146	120	80
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				3		
Queuing Penalty (veh)				1		

Network Summary

Network wide Queuing Penalty: 14

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	100	245	221	75	232	200	153	85	61
Average Queue (ft)	81	120	83	10	116	75	69	31	26
95th Queue (ft)	115	256	208	41	204	164	130	67	53
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		1	0						
Queuing Penalty (veh)		6	0						
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	27	4			10				
Queuing Penalty (veh)	108	6			1				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	UL	T	T	LR
Maximum Queue (ft)	287	205	56	226	208	122
Average Queue (ft)	91	46	18	53	44	41
95th Queue (ft)	204	148	48	148	136	87
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				2		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 123

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	98	226	221	96	219	167	108	189	115
Average Queue (ft)	47	87	63	20	96	49	46	78	37
95th Queue (ft)	96	188	152	59	179	128	92	141	75
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0	0					0	
Queuing Penalty (veh)		1	1					0	
Storage Bay Dist (ft)	75			100					150
Storage Blk Time (%)	5	7		0	6			1	0
Queuing Penalty (veh)	20	4		0	2			1	0

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	210	165	83	214	211	101
Average Queue (ft)	87	49	22	62	50	44
95th Queue (ft)	180	124	60	157	138	83
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			95			
Storage Blk Time (%)				3		
Queuing Penalty (veh)				1		

Network Summary

Network wide Queuing Penalty: 30

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	142	139	112	36	175	117	150	57	61
Average Queue (ft)	74	43	25	8	74	32	62	17	28
95th Queue (ft)	129	106	79	28	138	83	119	46	52
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	130			100					150
Storage Blk Time (%)	1	0			3				
Queuing Penalty (veh)	4	0			0				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	UL	T	T	LR
Maximum Queue (ft)	158	93	40	147	124	79
Average Queue (ft)	60	23	7	31	24	33
95th Queue (ft)	138	65	28	96	78	63
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			50			
Storage Blk Time (%)			0	3		
Queuing Penalty (veh)			0	0		

Network Summary

Network wide Queuing Penalty: 5

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	89	158	124	58	175	162	106	112	93
Average Queue (ft)	33	59	37	17	72	34	46	46	45
95th Queue (ft)	69	121	95	42	136	90	86	95	77
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	130			100					150
Storage Blk Time (%)		1			2				
Queuing Penalty (veh)		0			1				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	172	133	46	142	142	54
Average Queue (ft)	50	29	13	40	35	27
95th Queue (ft)	132	93	39	119	104	52
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			50			
Storage Blk Time (%)			0	4		
Queuing Penalty (veh)			1	1		

Network Summary

Network wide Queuing Penalty: 3

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	143	167	162	115	214	181	128	70	71
Average Queue (ft)	69	51	36	12	111	65	56	29	27
95th Queue (ft)	125	136	107	56	189	147	100	63	54
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0	0						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (ft)	130			100					150
Storage Blk Time (%)	1	0		0	9				
Queuing Penalty (veh)	4	1		0	1				

Intersection: 2: Spring Street & Bridgeway

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	UL	T	T	LR
Maximum Queue (ft)	235	190	60	157	146	105
Average Queue (ft)	92	50	17	40	33	39
95th Queue (ft)	192	135	50	118	100	77
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			50			
Storage Blk Time (%)			2	4		
Queuing Penalty (veh)			9	1		

Network Summary

Network wide Queuing Penalty: 16

Intersection: 1: Easterby Street/Marinship Way & Bridgeway

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	102	194	170	71	203	156	92	111	65
Average Queue (ft)	40	58	41	18	92	50	36	63	33
95th Queue (ft)	82	134	114	45	166	112	72	105	57
Link Distance (ft)		241	241		436	436	321	198	
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	130			100					150
Storage Blk Time (%)		1		0	4				
Queuing Penalty (veh)		0		0	1				

Intersection: 2: Spring Street & Bridgeway

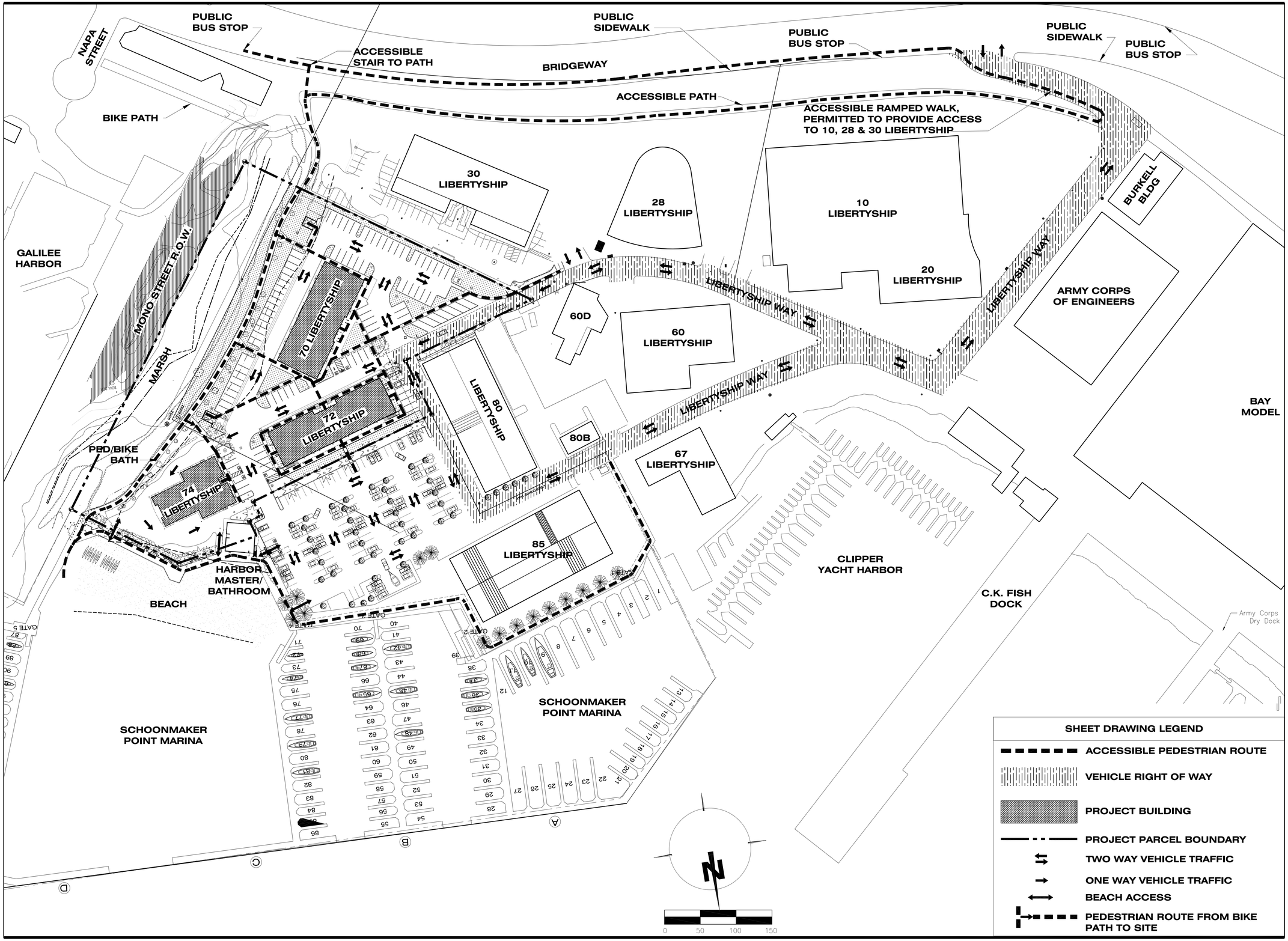
Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	211	169	57	178	161	100
Average Queue (ft)	97	54	18	51	43	40
95th Queue (ft)	187	131	47	132	118	78
Link Distance (ft)	498	498		241	241	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			50			
Storage Blk Time (%)			2	5		
Queuing Penalty (veh)			8	1		

Network Summary

Network wide Queuing Penalty: 10

Appendix C

Circulation Exhibits



SHEET DRAWING LEGEND

- ACCESSIBLE PEDESTRIAN ROUTE
- VEHICLE RIGHT OF WAY
- PROJECT BUILDING
- PROJECT PARCEL BOUNDARY
- TWO WAY VEHICLE TRAFFIC
- ONE WAY VEHICLE TRAFFIC
- BEACH ACCESS
- PEDESTRIAN ROUTE FROM BIKE PATH TO SITE

ONDA ROSA

Architecture
Urban Design
Space Planning
Interior Design

129 JASPER PLACE
S.F., CA 94133
415.362.7441

LICENSED ARCHITECT
BRENT J. McDONALD
C – 24017
Dec. 31, 2021
RENEWAL DATE
STATE OF CALIFORNIA

LIBERTYSHIP II PARTNERSHIP

70 - 74 LIBERTYSHIP WAY
SAUSALITO, CA

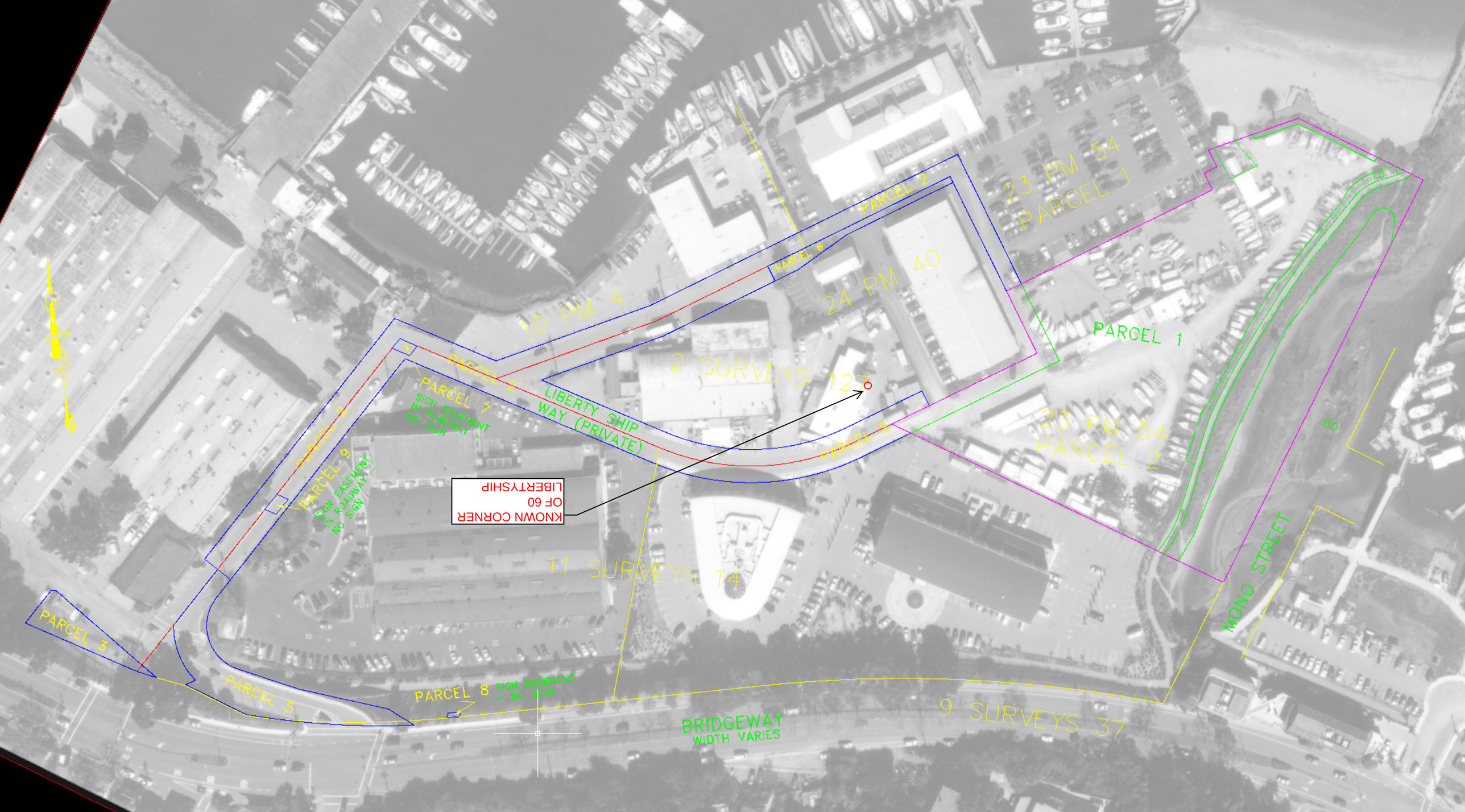
APN: 063-080-06

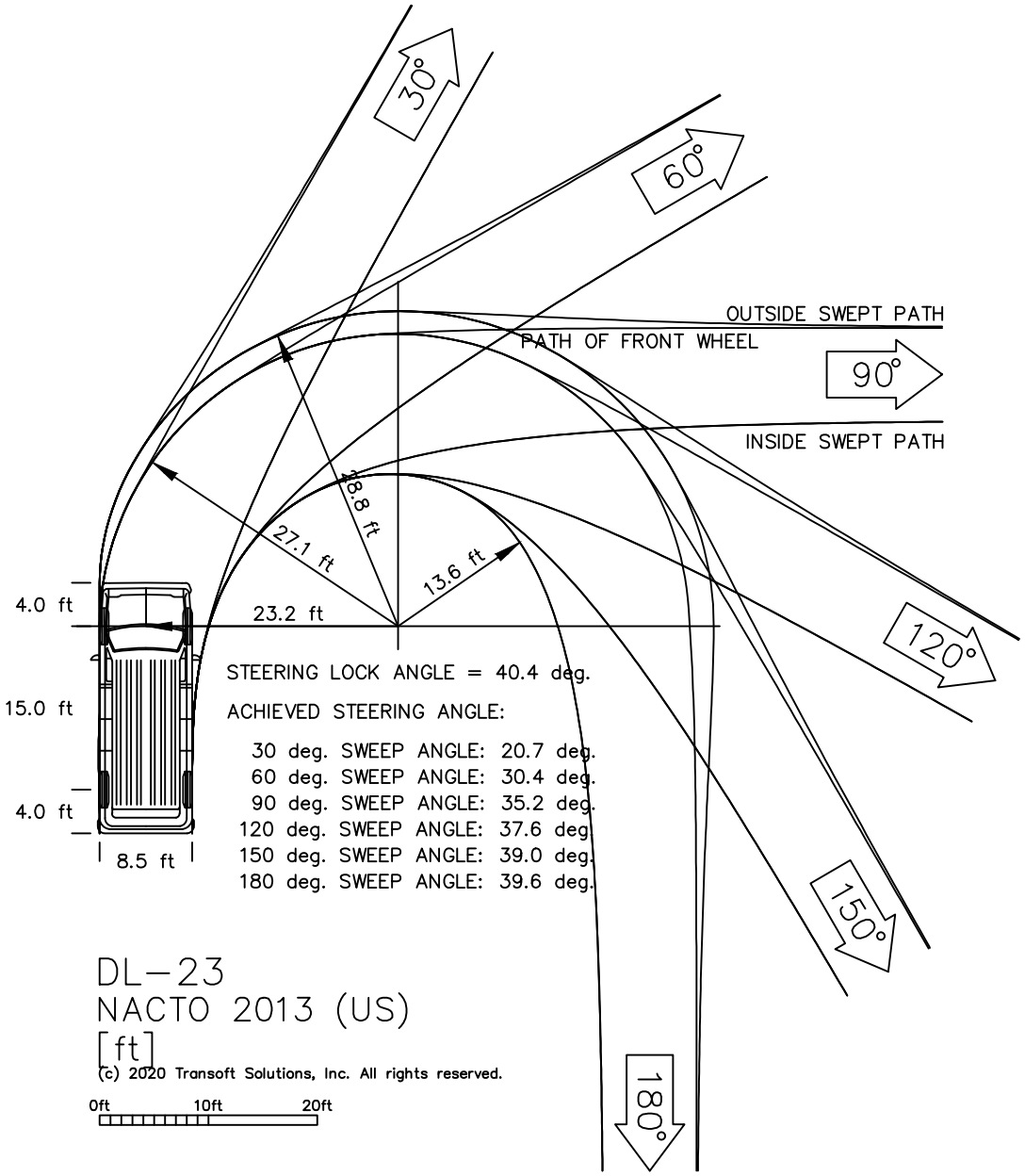
№	Revision/Issue	Date
	PLN'G/PW RESPONSE	09/20/18
1	PLN'G/PW RESPONSE	11/04/18
2	S.M.F.D.	11/12/18
3	SAUSALITO DPW	1/2/19
	PLN UPDATE	11/15/20

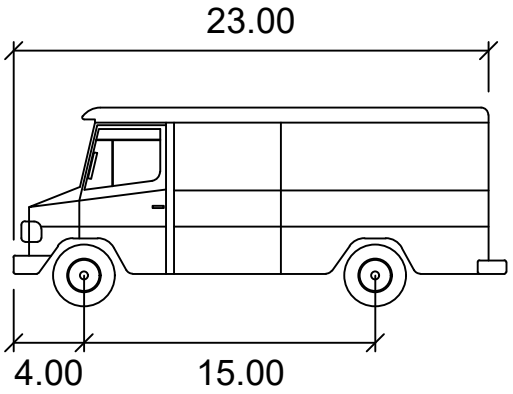
Project Number 2015.11
Scale 1" = 60'-0"
Drawn by BJM

ACCESSIBLE PATH

A 1.6


10 PM 4
24 PM 40
23 PM 54
PARCEL 1
PARCEL 2
PARCEL 1
2 SURVEYS 123
11 SURVEYS 14
9 SURVEYS 37
PARCEL 2
PARCEL 2
PARCEL 7
SIGN EASEMENT
IN ROADWAY -
NO SIGN
PARCEL 9
SIGN EASEMENT
IN ROADWAY -
NO SIGN
LIBERTY SHIP
WAY (PRIVATE)
PARCEL 2
PARCEL 3
PARCEL 5
PARCEL 8 SIGN EASEMENT
- NO SIGN
BRIDGEWAY
WIDTH VARIES
MONO STREET
60'
KNOWN CORNER
OF 60
LIBERTYSHIP





DL-23

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 40.4

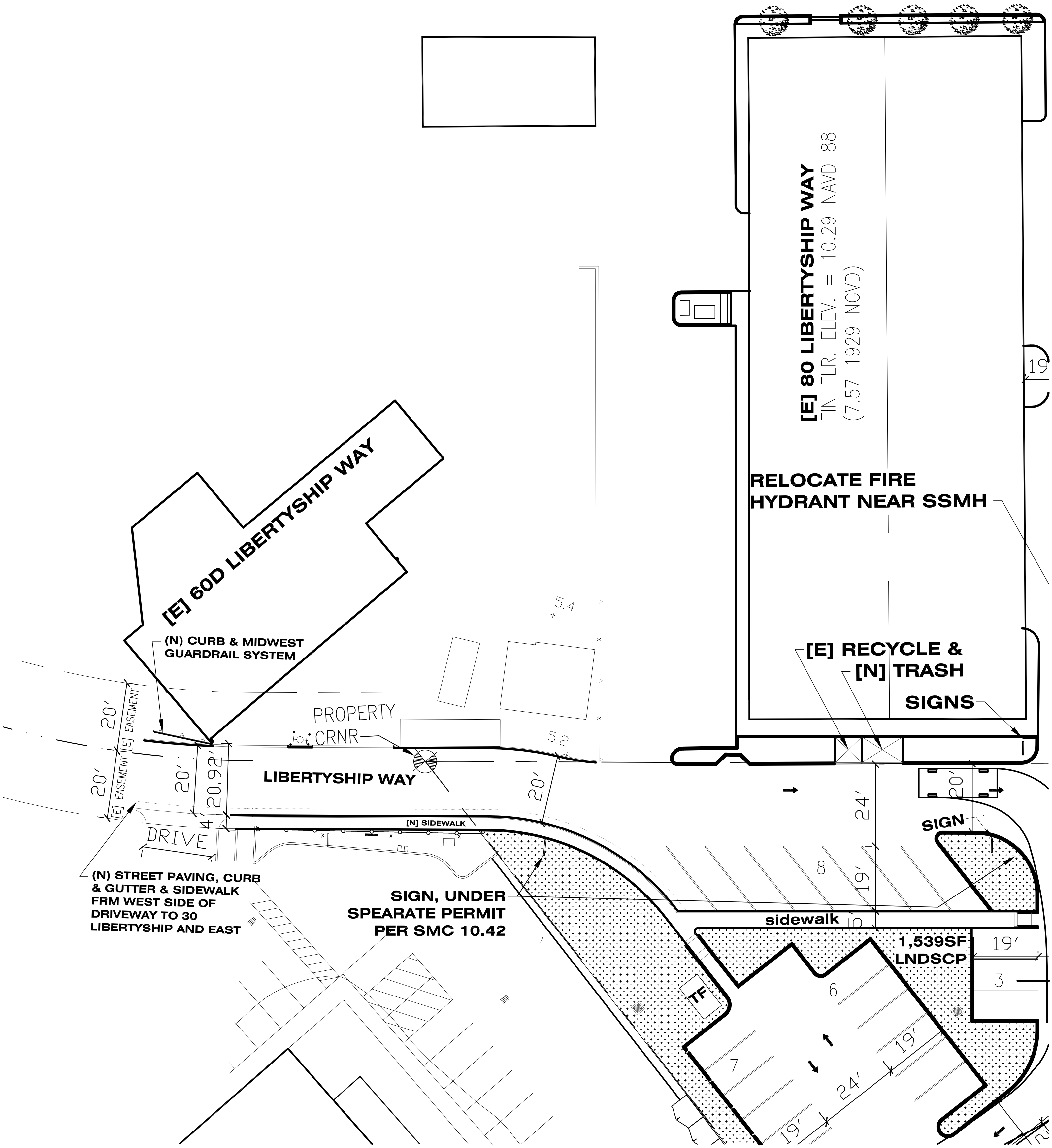
SOURCE: NACTO, 2013

DUDEK

NOT TO SCALE

DL-23 Design Vehicle Template

70-74 Liberty Ship Way Project


[E] 80 LIBERTYSHIP WAY
FIN FLR. ELEV. = 10.29 NAVD 88
(7.57 1929 NGVD)
RELOCATE FIRE
HYDRANT NEAR SSMH
[E] 60D LIBERTYSHIP WAY
(N) CURB & MIDWEST
GUARDRAIL SYSTEM
PROPERTY
CRNR
LIBERTYSHIP WAY
[E] RECYCLE &
[N] TRASH
SIGNS
SIGN
[N] SIDEWALK
DRIVE
(N) STREET PAVING, CURB
& GUTTER & SIDEWALK
FRM WEST SIDE OF
DRIVEWAY TO 30
LIBERTYSHIP AND EAST
SIGN, UNDER
SPEARATE PERMIT
PER SMC 10.42
sidewalk
1,539SF
LNDSCP
TF
[E] EASEMENT
20'
20.92'
24'
19'
5.4
5.2

[E] 60D LIBERTYSHIP WAY

(N) CURB & MIDWEST GUARDRAIL SYSTEM

[E] EASEMENT

[E] EASEMENT

PROPERTY CRNR

LIBERTYSHIP WAY

DRIVE

[N] SIDEWALK

(N) STREET PAVING, CURB & GUTTER & SIDEWALK FRM WEST SIDE OF DRIVEWAY TO 30 LIBERTYSHIP AND EAST

SIGN, UNDER SPEARATE PERMIT PER SMC 10.42

[E] 30 LIBERTYSHIP WAY

FIN FLR. = ELEV. 10.72 NAVD'88 (8.00 NGVD29)

RELOCATE FIRE HYDRANT NEAR SSMH

[E] FIN (7.5

[E] RECYCLE & [N] TRASH

SIGNS

SIGN

sidewalk

1,539SF LNDSCP

TF

1,338SF LNDSCP

980SF LNDSCP

BIKES

UP

UP

[N] BLDG 'B' - 72 LIBERTYSHIP WAY

FIN FLR. = ELEV. 12.38' (NAVD'88)

E.V. CHARGING

VAN

VAN

ACCESS

RECYCLE & TRASH

BIKES

842SF LNDSCP

PUBLIC 4 HOUR STALLS

2,339SF LNDSCP

PED ACCESS

[N] BLDG 'A' - 70 LIBERTYSHIP WAY

FIN FLR. = ELEV 12.60' (NAVD'88)

LOADING

LIGHT FIXTURE [TYP]

PED ACCESS

TRASH & RECYC.

2,347SF LNDSCP

[E] BIKE/PEDESTRIAN PATH

6,838SF LNDSCP

MARSH RESTORATION EASEMENT